

FINAL REPORT
ON THE
REVISION OF SETTLEMENT
(1878-83).
OF THE
LUDHIANA DISTRICT
IN THE
PANJAB.

BY
T. GORDON WALKER, C.S.,
SETTLEMENT OFFICER.

Calcutta:
PRINTED BY THE CALCUTTA CENTRAL PRESS CO., LD.,
5, COUNCIL HOUSE STREET.
1884.

From—J. WILSON, Esquire, Offg. Senior Secretary to Financial Commissioner, Panjab,
To—The Offg. Junior Secretary to Government, Panjab.

I AM directed to submit herewith, for the orders of Government, the Final Report of the Revised Regular Settlement of the Ludhiána District by Mr. Thomas Gordon Walker.

•This settlement was entirely conducted under the control of the Commissioner of Settlements and Agriculture, and it has therefore been judged unnecessary to ask for a review of it from the Commissioner of the Division.

2. The nucleus of the district was formed in 1835 by the Formation of the district. escheat of about 80 Jind villages on the death of Rája Sangat Singh without lineal heirs. With small exceptions the whole of the remaining district area consists either of the possessions of the Lahore Darbár on the left bank of the Sutlej which were annexed at the commencement of the First Sikh War, or of the territories of minor Chiefs, openly or secretly hostile to the protecting power, which were confiscated after that war had been concluded.

3. As at present constituted the district consists of an oblong block of country on the south bank of the river Sutlej between the Jullundur District and Native States. In addition to this there are a few detached villages or groups of villages lying further to the south entirely surrounded by the dominions of various Cis-Sutlej Chiefs. On the other hand, the continuity of the main block of the district by the river is broken by the intrusion of isolated Native villages and by a deep indentation of Native territory in the region which lies north-east of Malaudh. Taken as a whole the district has no striking physical features. It consists of a strip of low ground along the edge of the river which passes across a sandy ridge or bank of no great height into the ordinary plain country beyond. The area of the whole tract is only 1,378 square miles, so that in point of size the district is one of the smallest in the Punjab. But the soil is fertile and closely cultivated with valuable crops, the population is dense, and the annual land revenue more than eleven lakhs of rupees.

4. The means of communication are unusually good. Communications and markets. There are 125 miles of metalled road besides numerous good roads which are not metalled. The Sindh, Punjab and Delhi Railway crosses the district from south-east to north, and has several stations, including a very important one at Ludhiána city. A new line is also projected to join Ludhiána with Ferozepore and both with Karáchi. The river Sutlej runs along the whole northern front of the district with thirteen ferries and a Railway bridge at Phillour. And the Sirhind Canal which passes through every tahsíl is navigable for boats from Rúpar to Ferozepore. The district is also well supplied with markets. Ludhiána itself is the second commercial city of the Cis-Sutlej territory, and has a large and growing trade in cotton, wool, cloth, grain and seeds. Minor country towns of good trade are Jagraon, Raekot, Máchiwára and Khanna. There is in short no difficulty in disposing of all sorts of agricultural produce, and many of the peasantry are as keen in trade as in agriculture.

5. The total population of the district as given by the Population. census of 1881 is 618,835 souls. Mr. Walker calculates that the population properly called urban is not more than 60,000, leaving 558,835 souls directly or indirectly dependent upon agriculture. The cultivated area is 729,000 acres, and there are thus 1·3 acres cultivated per head of agricultural population. In particular parts of the district, however, such as the Ludhiána Pawádh and the Upper Dhaia of Samrála, there is barely one acre of cultivation per head. The holdings of the land-owners are larger than these figures might suggest. Mr. Walker calculates that every single Khewatdár has on the average in his own cultivation 6 acres in Samrála and Ludhiána and 8 acres in Jagraon.

By far the most important tribe in the district are the Jats, who number 222,665 souls, or about two-fifths of the whole rural population. About one-tenth of them are Muhammadan and the rest Hindu or Sikh. As usual the Muhammadans are inferior to their brethren, although both classes are of an excellent type. Indeed the Hindu Jats of the southern part of the district or Jangal country are rightly described by the Settlement Officer as some of the finest peasantry in India. Skilled and laborious agriculturists, they are also energetic

carriers, careful money-lenders, and experienced and wary traders. The minor agricultural tribes are the Rájpúts, Gújars, Aráins and Awáns. The first two of these are not of much account, the third are excellent market-gardeners, the fourth are extravagant and quarrelsome, but strenuous agriculturists and strict Muhammadans.

6. The cultivated area is no less than 729,000 acres, Agriculture. or 83 per cent. of the entire area of the district. Fifteen per cent. is artificially irrigated from wells. The remainder is unirrigated at present, but a considerable acreage will probably be watered shortly from the Sirhind Canal. The total crop acreage is 780,084, so that about 51,000 acres per annum are double-cropped. The whole of this double-cropped land, with the exception of about 8,000 acres, is irrigated from wells. Thus, speaking roughly, it may be said that two acres of well land give rather more than three acres of crops in the year. The most common staples are wheat or wheat mixed with gram in the rabi, and maize, millets and pulses in the kharíf; cotton occupies rather less than twenty thousand acres, and fodder crops are grown on nearly seventy thousand. The only other important crop is sugarcane, which is grown on 13,267 acres, of which nearly three-quarters are in the Samrála Tahsíl and almost all the remainder in Ludhiána. Practically there is no sugar grown at present in Jagraon, although the Sirhind Canal will soon work a change in this respect. The most usual system of husbandry is the two-year course common in most parts of the Punjab. But on the low land of the Bet, along the sandy ridge which borders the upland, in tracts where sugar is grown, and perhaps elsewhere this course is variously modified to suit the local and other conditions of cultivation. Mr. Walker has given an excellent account of the agriculture of the whole district—concise and yet full of matter.

7. It is unnecessary to notice the fiscal history of the Fiscal history. district before 1850 when the first regular settlement was commenced. This settlement was completed in 1853, and the assessment as finally sanctioned by the Commissioner (Mr. Barnes) amounted to Rs. 9,58,781, which at the time of its introduction fell at the average rate of Re. 1-6-8 per acre cultivated. This settlement was supposed to be moderate in Ludhiána and Samrála, but rather severe in

Jagraon. It has, however, worked exceedingly well throughout the district, most parts of which were in a very prosperous condition when the present revision of settlement commenced. The improvement in agricultural resources which took place during the 30 years from 1850 to 1880 may be summarily stated thus :—

Increase in—

Cultivated acreage	...	...	...	62,506
Irrigated acreage	...	...	...	7,254
Number of wells	...	...	...	1,097
Population	...	...	...	91,113

The increase in population is the difference between the census results of 1855 and 1881. The numbers of the people have grown steadily during the period of which we have a record, but the percentage of increase appears to be diminishing. Cultivation has on the average increased by about 2,000 acres per annum. The whole increase is considerable, being not far short for 100 square miles. But as the cultivated area is now 83 per cent. of the entire area of the district, the capacity for further expansion cannot be great. The increase in the number of wells is large. It must be remembered that concurrently with this increase in resources taxation in the shape of cesses has increased by Rs. 9-13-4 per cent. on the revenue; and though the law assumes that these cesses are not contributed from the share of produce due to the State, yet as a matter of fact this new demand for additional payments does operate to diminish the power of the agriculturist to meet enhancements of the State's revenue.

8. The subject of prices is separately discussed by Mr. Walker in the XIIIth Appendix to the present report. The rise in values, supported as it now is by Railway lines communicating both with Karáchi and with Bombay, has been great, and is fully taken advantage of by the agriculturists. Recent experience, however, has shown that some of the arguments and assumptions stated by the Settlement Officer require modification, and that though the rise which has taken place in prices may justify an enhancement in assessment, yet the enhancement would not be so great as 50 or 65 per cent., which is the rise assumed by Mr. Walker.

9. The produce estimate, which was based on the average prices of the 20 years ending 1879 (which prices corresponded closely with those assumed in the recent settlements of the Mooltan and Delhi Divisions) indicated an assessment of Rs. 12,31,359. The revenue rates adopted showed an assessment of Rs. 11,25,697, while the amount actually assessed was Rs. 11,12,644, or an increase of 18 per cent. over the assessment actually in force in the last year of the regular settlement. This new assessment falls on cultivation at the rate of Re. 1-8-5 per acre, or about 2 annas an acre (9 per cent.) more than the rate of the first regular settlement at the date of its introduction. The following table shows the incidence per acre cultivated of the regular settlement at its introduction and at its termination as compared with the new assessment. The results are given both for land revenue alone and for land revenue with cesses :—

				Rs. A. P.
Average incidence per cultivated acre.	Of regular settlement.	In 1850	By Land Revenue only ...	1 6 8
			By Land Revenue with cesses ...	1 8 9
		In 1880	By Land Revenue only ...	1 4 1
			By Land Revenue with cesses ...	1 7 8
	Of new assessment.	At introduction.	By Land Revenue only ...	1 8 5
			By Land Revenue with cesses ...	1 13 0

After allowing for māsīs, zaildārs, protective pattas and other minor deductions, the immediate gain from the new settlement is Rs. 1,18,187 per annum to Government and Rs. 25,391 to jāgīr revenue. These amounts will be increased by about Rs. 6,000 and Rs. 600 respectively as protective leases fall in.

10. Some brief remarks may conveniently be made on the results of the new assessment in each circle.

But circles.

In the Samrála Bet cultivation had increased since last settlement by only 2 per cent. and there is almost no irrigation (2 per cent. of the cultivated area) ; but both statistics and enquiries showed that the previous assessment was much below the half net assets standard. On the other hand, there is much debt and the land is fast passing into the hands of money-lenders. The increase of assessment was chiefly based on the great rise on prices, which for the crops which occupy about three-fourths of the area was found to be about 50 per cent. The rates of the former and present settlements may be compared as follows :—

Class of soil.	Revenue rate of last settlement per acre.			Revenue rate of present settlement per acre.		
	Rs. A. P.			Rs. A. P.		
Irrigated	3	10	0	4	0	0
Dofasli	3	10	6	2	10	0
Ekfasli	1	6	9	1	8	0
Ekfasli	1	6	9			
Ekfasli	0	12	9			

with reductions of $\frac{2}{3}$ and $\frac{1}{3}$ for land recently formed.

The resulting assessment gives an increase of 12 per cent., and the average incidence of the new assessment is Rs. 2-5-0 per acre against the average incidence at last settlement of Rs. 2 2-0 per acre of cultivation. On the other side of the Sutlej the similar tract of land forming the Bet circle of the Nawashahr Tahsíl in the Jullundur District has been recently assessed at the following rates per acre :—

Irrigated	Rs. 5-0-0 and Rs. 3-12-0
Dofasli	3-2-0
Ekfasli	2-0-0
Baráni	2-0-0 to Re. 1-0-0

and the average incidence of the new assessment is Rs. 2-3-0 per cultivated acre.

In the Eastern Bet of Tahsíl Ludhiána the increase of cultivation was 12 per cent. and of irrigation 22 per cent., 5 per cent. of the total cultivated area being irrigated. There was a great im-

provement in the character of the irrigation, and the people were generally in good circumstances. The revenue rates adopted compare with those of the last settlement as follows :—

CLASS OF SOIL.				REVENUE RATE PER ACRE					
				Of last settlement.			Of this settlement.		
				Rs.	A.	P.	Rs.	A.	P.
Irrigated	...	...	...	2	10	0	3	12	0
Dofasli	...	...	...	2	8	0	2	8	0
Ekfasi	...	...	...	1	6	3	1	7	0

The resulting assessment (Rs. 41,519) gave an increase of 20 per cent., and the average incidence of the new assessment is Re. 1-15-0 per acre of cultivation against Re. 1-11-0 the incidence of the previous settlement. These rates are lower than those sanctioned for the adjoining Samrála Bet and for the Nawashahr Bet across the river (already stated above), but the difference is justified by the difference in the value of the produce and the greater increase of revenue taken in this circle, as well as by the lower rainfall in this circle as compared with the Samrála Bet.

In the Western Bet of Tahsíl Ludhiána the cultivated area has owing chiefly to the action of the river decreased by $5\frac{1}{2}$ per cent., but under the diluvion rules the assessment has been correspondingly reduced. Irrigation has increased by 26 per cent. and has improved in character by the substitution of masonry wells for unlined wells. The irrigated area is 9 per cent. of the total cultivated area. The soil is inferior in quality to that of the Eastern Bet; the rainfall also is probably less; and the rates adopted are considerably lower, though a small part of the tract is peculiarly advantaged by its proximity to the Ludhiána market. The villages are on the whole prosperous, and some of them appear to have been under-assessed

Paragraphs 254 to 260.

at last settlement. The rates now adopted compare with those of last settlement as follows :—

CLASS OF SOIL.				REVENUE RATE PER ACRE					
				Of last settle- ment.			Of this settle- ment.		
				Rs.	A.	P.	Rs.	A.	P.
Irrigated	...	...	...	2	5	7	3	12	0
Dofasli	...	...	...	2	15	5	1	10	0
Eklasli	...	...	...	1	4	6	1	4	0

The resulting assessment (Rs. 35,535) gave an increase of 23 per cent., and the average incidence is Re. 1-6-0 per cultivated acre against the incidence of Re. 1-5-0 of last settlement. In the Phillour* Tahsil of the Jullundur District across the river the rates sanctioned at the recent settlement are as follows :—

Irrigated	Rs. 4-8-0	Rs. 3-0-0
Dofasli	„ 2-4-0	
Eklasli	„ 1-8-0 to Re. 1-2-0	

and the incidence of the resulting assessment is Rs. 2-4-0 per acre of cultivation. These rates are those of the Phillour Tahsil at large, the soil and agricultural advantages of which are much superior to those of this Bet tract.

The Bet of the Jagraon Tahsil is a small and unimportant circle. Against an increase of 6 per cent. in cultivation and of 47 per cent. in irrigation (only 4 per cent. of the cultivated area is irrigated), an increase of 5 per cent. has been taken, the new assessment being Rs. 11,364. The average incidence per cultivated acre is Re. 1-2-0 against the incidence of Re. 1-3-0 at last settlement. As the circumstances of this tract are exceptional no suitable comparison can be made between the rates here sanctioned and those of the adjoining Phillour Tahsil.

The Financial Commissioner would draw attention to the manner in which the average incidence of assessment falls as the distance from the Himalayas increases, i. e., as the rainfall decreases. Taking the several Bet circles in this order the average incidence is—

<i>Circle.</i>		<i>Last settlement.</i>			<i>New settlement.</i>		
		Rs.	A.	P.	Rs.	A.	P.
Bet Samrāla	...	2	2	0	2	5	0
„ Ludhiāna, East	...	1	11	0	1	15	0
„ „ West	...	1	5	0	1	6	0
„ Jagraon	...	1	3	0	1	2	0

This result is in general agreement with the comparative advantages of agriculture in each of these tracts.

11. The belt of sandy land which lies between the Sutlej alluvial (Bet) and the great southern plain (Upper Dhaia) of the district has been assessed separately in the three tahsils under the name of Lower Dhaia. In the Samrāla Tahsíl the Lower Dhaia Circle consists partly of good alluvial lands and partly of poor sandy uplands classed together as belonging to the same villages. The cultivated area of the whole circle is the same as at last settlement, except for the area occupied by the Sirhind Canal. Irrigation has increased by 10 per cent. (the proportion of irrigation to cultivation being 7 per cent. for the Dhaia proper). The revenue rates adopted for the Bet portion of this circle were somewhat higher than those sanctioned for the adjoining Bet Circle, as the alluvial land was superior. To the Dhaia land proper the following rates were applied :—

<i>Soil.</i>			<i>Rates per acre.</i>		
			Rs.	A.	P.
Chāhi	...	...	3	0	0
Rausli	...	...	1	0	0
Bhur	...	...	0	10	0

It is not easy to compare these rates with those of last settlement, as the previous assessment was much below the rates then framed, but the general result for this part of the tract is much the same as before. The new assessment for the

whole circle (Rs. 28,154) gives an increase of 8 per cent. with an average incidence of Re. 1-2-0 against the former incidence of Re. 1 per cultivated acre.

In the Lower Dhaia Circle of Tahsil Ludhiána also some of the alluvial Bet lands have been included as belonging to villages having part of their area on the sandy high land or Dhaia proper. In the Bet portion of the circle cultivation had increased by 12 per cent. and irrigation had more than doubled, the irrigated area being now 13 per cent. of the total cultivation; the character of the irrigation had also improved. In the Dhaia portion cultivation had only increased by 2 per cent. and irrigation had decreased by 6 per cent. and now comprise 7 per cent. of the total cultivated area. With the exception of a few thriftless villages the tract is well off, and while on the one hand the sandy Dhaia lands are poor, on the other the villages are favourably situated as regards markets for their produce. The rates adopted compare as follows with those of last settlement, but it must be remembered that the assessment of last settlement was 20 per cent. below rates :—

REVENUE RATE PER
ACRE.

CLASS OF SOIL.	Of last settlement.			Of this settlement.		
	Rs.	A.	P.	Rs.	A.	P.
Bet Cháhi ...	2	11	0	3	12	0
„ Dofasli ...	2	2	6	2	4	0
„ Ekfasli ...	1	4	6	1	4	0
Dhaia Cháhi Nai	3	9	0	3	8	0
„ „ Khális	2	7	0	2	8	0
„ Rausli ...	1	2	0	1	2	0
„ Bhur ...	0	14	0	0	12	0

The Settlement Officer was instructed to assess slightly above these rates, so as to give an increase of 10 per cent. on the former assessment, and the new assessment (Rs. 80,100)

gave this increase. The incidence of the revenue is now about Re. 1-5-0 against the incidence of Re. 1-4-0 at the previous settlement.

In the Lower Dhaia Circle of Tahsíl Jagraon cultivation had increased by 8 per cent. and irrigation by 38 per cent. In other respect the circle was very similar to the Lower Dhaia of the Ludhiána Tahsíl, and the same rates were sanctioned in both circles except that the rate for Bet *dofasli* was made Re. 1-10-0 in Jagraon as against Rs. 2-4-0 in Ludhiána. The assessment of the previous settlement had been 15 per cent. below the rates, which were the same here as in Ludhiána. The new assessment (Rs. 67,012) gave an increase of 7 per cent., the average incidence being about Re. 1 per acre, or much the same as at last settlement. A comparison of these circles with the Dhaia Bet and Retli Circles in the adjoining Nawashahr Tahsíl of the Jullundur District on the other side of the river has been suggested. Of the Bet lands of the two districts a comparison has already been made, so that the present remarks may be confined to the Dhaia lands proper. The rates sanctioned at the recent settlements are as follows :—

Ludhiána District.

CLASS OF SOIL.	REVENUE RATE PER ACRE.		
	Tahsíl Samrála.	Tahsíl Ludhiána.	Tahsíl Jagraon.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Niai Cháhi	3 0 0	3 8 0	3 8 0
Khális Cháhi	3 0 0	2 8 0	2 8 0
Rausli	1 0 0	1 2 0	1 2 0
Bhur	0 10 0	0 12 0	0 12 0
Increase of new assessment	8 per cent.	10 per cent.	7 per cent.

Jullundur District:

CLASS OF SOIL.	REVENUE RATE PER ACRE. .	
	Nawashahr Dhaia Bet.	Nawashahr Retli.
	Rs. A. P.	Rs. A. P.
Irrigated dofalsi	4 12 0	4 5 0
Irrigated ekfalsi	3 4 0	2 14 0
Unirrigated 1st class	1 12 0	1 6 0
Do. 2nd class	1 4 0	1 1 0
Do. 3rd class	1 0 0	0 12 0
Increase of new assessment	12 per cent.	15 per cent.

The Jullundur rates are thus much higher than those of the Ludhiána District; the truth being that the comparison has no better foundation than the sandy nature of the soils in each circle. In all other respects the Jullundur circles are far superior, being naturally more fertile and having a better and more copious rainfall.

12. The remainder of the district may be described generally as a tract of good loam, well cultivated and irrigated, and inhabited by a thrifty, industrious and prosperous population. The belt of land lying south of the sandy Lower Dhaia tract has been formed in each tahsil into an Upper Dhaia Assessment Circle. In the Samrála Upper Dhaia there was an increase of 7 per cent. in

Upland circles.

Paragraphs 233 to 239.

cultivation and of 4 per cent. in irrigation, 42 per cent. of the total cultivated area being irrigated. The tract has a good soil and a steady average rainfall of 27 inches; it is highly irrigated, and cultivated for the most part by thrifty agriculturists, who are unusually free of debt, and has greatly benefited from the rise of prices and from improved markets following on the completion of railway communications with Southern India. The rates sanctioned compare as follows with those of the former settlement, but it must be remembered that the assessment actually imposed at that settlement was 10 per cent. below that given by the rates :—

SOIL.	REVENUE RATE PER ACRE					
	Of last settlement.			Of this settlement.		
	Rs.	A.	P.	Rs.	A.	P.
Cháhi Niai	6	12	3	4	12	0
Cháhi Khális	2	8	10	3	8	0
Rausli	1	6	8	1	6	0
Bhur	0	14	6	0	14	0

These rates would have given an increase of 24 per cent., which was considered rather high, and the Settlement Officer was instructed not to let his actual assessments go above a 20 per cent. increase. The assessment actually imposed (Rs. 2,46,293) gives an increase of 19 per cent. with an average incidence of Rs. 2-5-0 per cultivated acre, the incidence of the previous assessment having been Rs. 2-1-0

Paragraphs 265 to 281.

at the time it was made. In the Ludhiána Tahsíl the three circles, Upper Dhaia, Pawádh and Tihára, are all very similar in character to

the Upper Dhaia Circle of Samrála, and may be discussed together. The increase of cultivation in these three circles has been 6, 16 and 8 per cent. respectively. The proportion of irrigation to total cultivation is respectively 22, 29 and 15 per cent. As compared with the previous settlement, there is no increase of irrigation in the Upper Dhaia and Tihára Circles, but the character of the irrigation has much improved, and in the Pawádh Circle irrigation has increased by 21 per cent. All three circles are in a prosperous condition, and the thrifty cultivators have reaped the full advantage of the rise in prices. The rates sanctioned at the present settlement are as follows :—

SOIL.	REVENUE RATE PER ACRE.					
	Upper Dhaia.		Pawádh.		Tihára.	
	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.
Cháhi Niai	4	8 0	4	2 0	4	0 0
Cháhi Khális	3	4 0	3	0 0	2	12 0
Rausli	1	6 0	1	4 0	1	4 0
Bhur	0	14 0	0	13 0	0	12 0

The difference of rates is mainly caused by the increasing depth of the wells and the decreasing rainfall away from the rivers. Generally speaking they correspond in this respect with those of last settlement and are pitched somewhat lower, but the assessments actually imposed at last settlement were considerably lower than those which would have been given by the rates. The assessments now made give an increase of 17 per cent. in the Upper Dhaia (Rs. 1,70,639), of 22 per

cent. in the Pawádh (Rs. 54,360), and of 20 per cent. in the Tihára (Rs. 95,996), and the average incidence per acre compares as follows with that of last settlement :—

Incidence per acre.			Upper Dhaia.	Pawádh.	Tihára.
			Rs. A. P.	Rs. A. P.	Rs. A. P.
Of last settlement	...	...	1 11 0	1 14 0	1 6 0
Of present settlement	...	...	1 14 0	2 0 0	1 8 0

The Upper Dhaia of Tahsíl Jagraon is similar to those of the other tahsils in the character of the soil and of the population, but inferior to them in having a decidedly lower rainfall, and consequently the rates adopted are lower. They compare as follows with those of the previous settlement, but here again the actual assessment of last settlement was much below that given by the sanctioned rates :—

SOIL.				REVENUE RATE PER ACRE	
				Of last settle- ment.	Of this settle- ment.
				Rs. A. P.	Rs. A. P.
Cháhi Niai	...	...	...	3 10 10	3 12 0
Cháhi Khális	...	...	...	2 5 5	2 8 0
Rausli	...	...	...	1 5 2	1 3 0
Bhur	...	...	...	1 0 5	0 12 0

The increase of cultivation was 12 per cent. and of irrigation 13 per cent., 8 per cent. of the cultivated area being now irrigated by wells. The new assessment (Rs 2,01,415) gave an increase of 20 per cent., and the average incidence is Re. 1-5-0 per acre against the former incidence of Re. 1-3-0.

A comparison may be made between these upland tracts of the Ludhiāna District and the corresponding upland parts of the Nawashahr, Phillour and Nakodar Tahsils of the Jullundur District to the north which have been recently settled. In those tahsils the soil is on the whole better and moister, the rainfall more abundant, and the spring level nearer the surface than in the corresponding tract of Ludhiāna, and the revenue rates adopted are correspondingly higher, as will be seen from the following statement :—

SOIL.	REVENUE RATE PER ACRE.									
	Nawashahr Dhak.			Phillour.			Nakodar Maizki.			
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Irrigated dofasli ...	5	4	0	4	8	0	}	4	0	0
Irrigated ekfasli ...	3	8	0	3	0	0				
Unirrigated 1st class	1	12	0	1	8	0		1	6	0
Do. 2nd class	1	8	0	1	2	0	}	0	14	0
Do. 3rd class	1	0	0	0	12	0				
Average incidence ...	3	5	0	2	6	0		2	1	0
Increase ...	20 per cent.			15 per cent.				19 per cent.		

The Jangal Circle of Tahsíl Ludhiána consists chiefly of detached portions of British territory surrounded by Native States, and the rates cannot well be compared with those of neighbouring districts. There is almost no irrigation owing to the great depth to water. Cultivation has increased by 18 per cent. and population by 41 per cent., and the condition of the people is exceptionally prosperous. The improvement of communications and consequent rise of prices is even more marked here than in the rest of the district. The rates sanctioned compare as follows with those of last settlement:—

SOIL.	REVENUE RATE PER ACRE					
	Of last settlement.			Of this settlement.		
	Rs.	A.	P.	Rs.	A.	P.
Irrigated ... ..	...			1	6	0
Rausli	0	11	0	0	11	0
Bhur	0	8	0	0	8	0

but the assessment actually imposed at last settlement was much below that given by the sanctioned rates. At this settlement also, while the above rates would have given an increase of 39 per cent., the actual enhancement was restricted to 33 per cent., and the average incidence per cultivated acre is now Re. 0-10-8 against the former incidence of Re. 0-8-11.

13. It is difficult in a brief review such as the present General remarks on the to do justice to the many circumstances assessment. which influenced the Settlement Officer in fixing individual rates; but the Financial Commissioner trusts that the above remarks will sufficiently show that the

assessment as a whole and in its principal details was made with due regard to the general policy of Government, and that it now deserves final approval. Great care has been taken to avoid any unnecessary disturbance of the rates and results of the previous settlement. In almost all instances the rates are little changed, and the gross increases taken represent a very moderate estimate of what is due to the combined results of increased cultivation and increased prices. Colonel Wace has recently marched through the district and saw nothing which leads him to think that the people after three years' experience of the new assessments are otherwise than well satisfied with their moderation. He also believes that the respective merits of the several villages have been appreciated in a manner which gave much satisfaction to the persons concerned, and inside each village the distribution on holdings also has been very carefully adjusted in accordance with the circumstances and present wishes of the owners.

14. The experience of the past forty years appears to show that the district as a whole is fairly secure from drought severe enough to call at any time for measures of general relief. Even the outlying villages of the Jangal tract, with their comparatively small rainfall, are now practically secured by the possibility of irrigation from the Sirhind Canal. The account given in paragraph 123 of the report of the effects of protracted drought upon the different parts of the district will be a useful guide to the District Officer in determining whether in exceptional cases it is necessary to act upon the general instructions regarding suspension of revenue in bad seasons.

15. The remaining matters connected with the settlement may be very briefly disposed of. The new system of alluvion and diluvion enquiry now introduced is described on pages 268-9 of the present report. Practically the chak system has been maintained, but provision has been made for alterations in the chak boundaries. Within the chak all culturable waste and new cultivation will be assessed at acreage rates fixed beforehand, which in the case of cultivation begin low and grow to their maximum in four years. Lieutenant-Colonel Wace thinks it would have been better if the raising of the rates

had been left to depend on the cultivation of the superior crops, as has been arranged for the opposite bank of the Sutlej in Jullundur and Hoshiárpur. The Financial Commissioner also trusts that the Deputy Commissioner will pay constant attention to the remarks as to the Patwári agency at page 267 of the present report. Few things are more injurious to the proper revenue administration of a district than the formation of strong cliques and family circles among the Patwáris and Kánúgos. Money-lending and trading Patwáris are equally objectionable and should be repressed with some vigour.

16. The sanction of Government is now required for the new assessment and cesses and for the new record of rights. The cesses are enumerated at page 258 of the present report and amount to Rs. 18-15-4 per cent. on the land revenue. Out of this Rs. 10-13-4 per cent. is the local rate assessed under Act XX. of 1883, and therefore requires no further order. The remaining amount of Rs. 8-2-0 per cent. is for payment of the Lambardári and Patwári services. The Financial Commissioner considers that the Patwári cess has been assessed too low, the rate being only Rs. 3-2-0 per cent. The result is shown in the rates of the Patwáris' pay (see page 266), which in no case exceed Rs. 12 per month, and average little more than Rs. 9. It is not probable that these low rates of pay can be maintained, and I am therefore to recommend that in sanctioning the settlement it be expressly stipulated that the rate of the Patwári cess will be raised as may hereafter be found necessary. He will address Government on this subject very shortly. As to the term of settlement the new assessments were given out for thirty years, and the same period has been fixed in Jullundur and Hoshiárpur. There appears to be no necessity for any longer sanction. Mr. Walker indeed recommends a sanction for fifty years on the grounds that there is little room for expansion of cultivation, while the rise in prices has been discounted in the new assessment. The Financial Commissioner is not in favour of sanctioning the assessment for a longer period than thirty years. The condition of the alluvial tracts of the Sutlej is liable to considerable change. And as regards both these tracts and the adjoining sandy up-

Orders required.

Paragraph 308.

lands (described in the report as Lower Dhaia) Lieutenant-Colonel Wace does not feel the same confidence as to their future prosperity as can safely be entertained in regard to the rest of the district. Moreover, in the Jagraon Tahsíl and in part of the Ludhiána Tahsíl the conditions of agriculture will probably be materially changed by the spread of irrigation from the Sirhind Canal. And, finally, we are not able to estimate with any certainty the course of trade and prices during the next few years. The connection of the local trade with the seaports of India is an entirely new departure of quite recent date, the full results of which, mixed up as they are with the silver question, cannot at present be foreseen. For all these reasons the Financial Commissioner prefers to adhere to the present system of thirty year leases, leaving it to the administration of thirty years hence to decide whether on the facts then existing the leases can suitably be continued without revision. The new assessment runs in the case of the Samrála Tahsíl from kharif 1881, and in the case of the rest of the district from kharif 1882.

17. Work on the revised settlement was started on the 1st October 1878, but the full settlement establishment did not join until the end of that year. The settlement was practically complete by January 1883, and almost the whole of the establishment were transferred to Umballa before the following June. The work thus lasted about $4\frac{1}{2}$ years; but if deductions be made on account of the census and other matters, the real time occupied was not much more than four years. This expedition compares well with the results in most recent settlements. The net cost of the operations was Rs. 3,60,766, and the initial annual gain to the land revenue of Government was Rs. 1,18,187. Thus the whole expense of settlement will be recovered in about three years, so that the financial result is extremely profitable.

18. From first to last the settlement was conducted by Mr. Walker, whose management of it appears to the Financial Commissioner to exhibit great industry and good judgment. His assessment work is of exceptional merit, and the Patwári papers filed during the past three years are exceptionally good—a result which is of itself sufficient testimony to Mr. Walker's success.

in his record work. Mr. Walker has also furnished the present report, which is an excellent specimen of its class. Its length, which is considerable, might have been curtailed by the abbreviation or omission of matter which has since been re-published as Volume V of the Customary Law Series, and the assessment chapter (No. VIII) might have been consolidated with advantage. But as a whole the report seems to the Financial Commissioner to be unusually well adapted to fulfil its main purpose of furnishing a Revenue Manual for the district administration. It is particularly commendable for its accumulation of important or interesting facts, its conciseness of language, its absence of theorizing, and it exhibits a knowledge of the people greater than our officers usually possess, which could have been obtained only by very close and sympathetic observation. The village note-books also have been written up to date year by year since settlement operations concluded under arrangements which Mr. Walker initiated. For all these reasons, the Financial Commissioner commends Mr. Walker's services to Government as worthy of very special commendation. Of the officers employed under him, Mr. Walker mentions Extra Assistant Settlement Officers Chiranjit Lál and Ahmad Bakhsh; also Superintendents Ishar Dás and Jodh Singh. Of these, Chiranjit Lál and Ishar Dás have since died. To the other two, *viz.*, Extra Assistant Commissioner Ahmad Bakhsh and Tahsildár Jodh Singh, the Financial Commissioner hopes that suitable acknowledgments of their services may be conveyed.

Proceedings of the Hon'ble the Lieutenant-Governor of the Punjab in the Revenue and Agricultural Department (Revenue), No. 113, dated 25th April 1889.

READ—

The Final Report of the Revised Regular Settlement of the Ludhiána District by Mr. T. Gordon Walker, submitted with letter No. 110, dated 4th February 1886, from the Senior Secretary to the Financial Commissioner, Punjab.

REMARKS.—The Ludhiána District, including as it does an area of only 1,378 square miles, is the smallest but three of the 31 districts of the Punjab, but stands sixth in the amount of its total land revenue assessment. It consists in the main of a tract 24 miles deep lying for 60 miles along the south bank of the Sutlej. Patiala territory juts far into it at one place, and villages belonging to that State lie embedded

in it. On the other hand, there are groups of outlying British villages in the Native territories to the south. In the body of the district the rainfall averages from about 30 inches in the north-east to 20 inches in the south-west; in the outlying villages to the south it is less, for here, as in the Punjab generally, the amount of the rainfall diminishes from north to south and from east to west. Immediately to the south of the Sutlej is a lowlying alluvial tract of recently formed land known as the Bet, which is some five or six miles broad in the eastern half of the district. Its southern boundary is a ridge of high land under which flowed a century ago the Sutlej and now flows a stream called the Budha Nulla. In the western half of the district the Sutlej gradually approaches this ridge, until finally the Bet disappears. South of this ridge stretches a plain, gently sloping from north-east to south-west, and unbroken save by a few sand ridges. In the composition of the soil clay predominates to the east of the district and sand to the west. The district generally is healthy; but in the Bet and along the Budha Nulla the population suffers terribly from fever. These are three tahsils,—Samrála to the east, Jagraon to the west, and Ludhiána in the centre.

2. With the exception of the Bet, the district is well suited to be the home of a healthy, hard-working agricultural population. One-third of its inhabitants are Jats, and placed here under conditions eminently favourable to the development of their good qualities, the Hindu Jats of Ludhiána, who own 62 per cent. of the area of the district, are the very ideal of peasant proprietors, hard-working, thrifty and, where the land does not demand the agriculturists' unceasing labour, enterprising carriers and traders. The Jats' one fault is quarrelsomeness, which has developed into litigiousness: they seem, however, from Mr. Walker's remarks in paragraph 105 to be able to work together where their interests are concerned in so doing. Muhammadan Rájpúts own 10 per cent. of the land, and in their favour little can be said; but it may be urged as some excuse for their failings that, as map No. III shows, their villages are chiefly in the unhealthy lowlying lands, where fever is continually weakening the race. The Gújars and the Aráíns own respectively 7 and 3 per cent. of the district lands. The former, who live mainly in the

Bet, are poor cultivators, though better than the Rájpúts; the latter are extremely hard-working, but somewhat dull. In religion the population is thus divided :—

Hindu ...	...	44½	per cent
Sikh ...	...	20½	„
Muhammadan	...	34½	„
Others ...	...	½	„

The Sikhs are to be found mainly in the west of the district and in the outlying villages to the south.

The density of the population is considerable, there being 450 persons to the square mile of total area, and 543 persons (and in certain tracts 600, 630 and 660 persons) to the square mile of cultivated area. Nevertheless the state of the agricultural population generally is one of considerable comfort : their wants are few and are well supplied. The present state of comfort and prosperity is said to be entirely the growth of recent years. Markets and the means of communication, both by road, rail and canal, are good. River traffic has practically ceased.

3. After forming under Mughal rule a part of the Sirhind Division, this district was later the scene of many of the struggles of the rising Sikh against the decaying Muhammadan power. Sirhind fell in 1763 and for the rest of the 18th century the district in the main enjoyed peace and prosperity under the rule of various minor Chiefs. Early in the present century Mahárája Ranjít Singh commenced a policy of interference with the Cis-Sutlej States, the necessity of preventing which first brought our troops to Ludhiána in 1809. In 1835, 80 villages became British territory owing to extinction of the direct line of the Jínd Rájás, and the struggle of the first Sikh War resulted in the formation of the present district by annexations from open and secret enemies and by an extension of more direct British authority over various minor Chiefs. In the Mutiny the rabble of Ludhiána city and Muhammadan Gújars of the Bet alone gave trouble : the Jats were steadfastly loyal. In 1872 the district was the scene of an abortive Kúka outbreak. The number of Kúkás now in the district is uncertain, as many of them think it wise to refrain from an open confession of their faith.

4. Mr. Walker's description of the agriculture of the district has been accorded deserved praise by the Financial Commissioner. It will suffice here to note that wheat (16 per cent.) and wheat mixed with gram (23 per cent.) make up the bulk of the total 56 per cent. of the yearly crops which are grown in the spring, while the chief items in the remaining 44 per cent. of the autumn harvest are maize (7 per cent.), pulses (12 per cent.), fodder crops (14 per cent.). Sugarcane is an important crop, especially in the Samrála Tahsíl, and, though occupying at settlement only 13,213 acres, represented a total annual crop value of some Rs. 12,00,000. The more valuable crops—sugarcane, maize, cotton and wheat—are most grown in the east of the district; to the west and in the outlying villages barley takes the place of wheat, and inferior crops, pulses and millets are more largely cultivated. The irrigated cultivation at the time of settlement was 15 per cent. of the total cultivation. The irrigation was then entirely from wells, ordinarily worked with the rope and leather bucket. The Persian wheel is used in only one or two villages. Irrigation from the Sirhind Canal has commenced since the close of settlement operations; it will be referred to hereafter. The average size of the owner's holdings is estimated by Mr. Walker at 6 acres in Samrála and Ludhiána and 8 acres in Jagraon. Cultivation must apparently have nearly reached its limit, but the opening of the Sirhind Canal may enable population to still increase.

5. The revenue management of the Sikh rulers aimed at taking from the cultivator the utmost that could be exacted. In the small tract which came under British rule in 1835 a summary settlement was made in 1839, and in 1842 this was succeeded by a 20 years' settlement. In the rest of the district a summary settlement was in force from 1846 to 1849, and in 1850 the first regular settlement was begun. By 1853 the new assessments had been announced. The 1842 assessments were at the same time revised, reductions found necessary being given at once. The regular settlement was conducted by Mr. Davidson. His assessments were based on rates of rent estimated for each crop and each description of soil in a somewhat elaborate classification. For crops on which the rents had been taken in kind produce estimates were framed. These are stated by the present Settlement

Officer to have been much too low for the irrigated, though correct for the unirrigated, lands. Mr. Davidson's figures showed a final assessment amounting to 58 per cent. of the estimated rental. Some reductions were subsequently given by the Commissioner, Mr. Barnes, chiefly in the Jagraon Tahsil. The final result of the regular settlement was a reduction of 11 per cent. from the total of the previous assessment of the Government villages and of the jágirdárs' estimates of their collections in the assigned villages.

6. Under this settlement the district, taken as a whole, has prospered exceedingly, and fortunately the character of the bulk of the agricultural population was such that the new wealth which they gained from the assessment of a fixed and moderate Government demand on the land and from the great rise in prices which occurred in the years 1860 to 1864 was not to them, as to less thrifty tribes it has too often been, an occasion of temporary extravagance and permanent indebtedness. The exceptions to this prosperity are mainly to be found, firstly, in the Samrála Bet, where the sugarcane cultivation which, though yielding large profits, needs an expenditure of capital and somewhat delayed returns has brought the unthrifty Muhammadans into bondage to the money-lending classes; and, secondly, in those villages which lying along the old high bank of the river contain much sandy soil of a very inferior kind.

7. The instructions for the re-assessment of the district were approved by the Government of India in January 1879 and were the same as in the re-settlements of the Delhi and Mooltan Divisions.

Letter from Under-Secretary to the Government of India, Department of Revenue, Agriculture and Commerce, to Secretary to Government, Punjab, No. 25, dated 14th January 1879.

The estimated gain to Government from the proposed re-assessment was Rs. 1,30,000 per annum and to the jágirdárs Rs. 20,000. Mr. T. G. Walker was appointed to the charge of the settlement and work was commenced at the end of 1878. Mr. Walker continued throughout in charge of the operations.

8. It was found necessary to recast the assessment circles, as those of the last settlement were largely based on artificial pargana divisions. The low-lying lands along the

Sutlej now constitute the Bet Circles. In the Ludhiána Tahsíl the Bet is again sub-divided into the Kacha Bet, subject to annual inundation, and the Pakka Bet Circles, being respectively the eastern and western halves of the Bet. The poor sandy tract to the immediate south of the high bank forms in each tahsíl the Lower Dhaia Circle. The Upper Dhaia Circles of Samrála and Jagraon Tahsíls and the Upper Dhaia, Pawadh and Tihára Circles of the Ludhiána Tahsíl include all the remainder of the district with the exception of the outlying villages, which form the Jangal Circle.

The classification of soils was also simplified. In the Bet the recognized classes are—

- (i) irrigated from wells ;
- (ii) do-fasli, land which regularly in its turn bears two crops ;
- (iii). ek-fasli, the outlying land, which seldom or never bears more than one crop.

In the rest of the district the unirrigated land was divided into two classes, "Rousli" or loam, and "Bhur" or sand, and the well lands were also divided into "Niai" and "Khális." The Niai well lands are those which, lying near the village site, receive most manure and most frequently bear two crops in the year.

9. The district is pre-eminently one of small cultivating proprietors. Only 21 per cent. of the land is cultivated by tenants, and of this 21 per cent. only one-third is held by tenants-at-will destitute of proprietary or occupancy rights in other lands.

Competition cash rents are paid for only 5 per cent. of the cultivated area ; ordinary rents throughout the upland tracts are given by the Settlement Officer as from Rs. 9-8 to Rs. 14 per acre for irrigated land, Rs. 4-12 to Rs. 7 per acre for unirrigated land of ordinary quality, and as low as Rs. 2-6 per acre for the poorer soils. But rents paid for such a small percentage of the land are indeed useful as a check upon an assessment, but are quite insufficient for its basis. This has to be found in districts circumstanced like Ludhiána in an estimate of the produce and of the value of the share taken by the owners when rents are paid in kind, and above all in a

review of the working of the expired settlement and of the increase during its currency of the resources of the district. Mr. Walker's produce estimate was very carefully framed and was based on 969 experiments extending over 3,192 acres. The produce was as usual valued at the average prices of 20 years, and the resulting estimate of that half share of the rental which constitutes the Government standard of assessment amounted to Rs. 12,31,359 for the whole district.

10. The Settlement Officer's reports on the revenue rates which he proposed to adopt were submitted for orders to Sir James Lyall in his then office of Financial Commissioner, and with a very few changes, chiefly in the direction of reducing the rates on well lands, the Settlement Officer's proposals were accepted. The sanctioned rates which have been used in the assessment are per acre as follows:—

BET CIRCLES.

				<i>Irrigated.</i>	<i>Do-fasli.</i>	<i>Ek-fasli.</i>
				Rs. A. P.	Rs. A. P.	Rs. A. P.
Samrála	...	...	...	4 0 0	2 10 0	1 8 0
Ludhiána—						
Kacha Bet	...	...	...	3 12 0	2 12 0	1 12 0
Pakka Bet I	...	...	...	3 12 0	2 8 0	1 7 0
" " II	...	...	...	3 12 0	1 10 0	1 4 0
Jagraon	...	...	...	3 12 0	2 0 0	1 4 0

BET LANDS OF LOWER DHAIA CIRCLES.

				<i>Irrigated.</i>	<i>Do-fasli.</i>	<i>Ek fasli.</i>
				Rs. A. P.	Rs. A. P.	Rs. A. P.
Samrála	...	...	...	4 8 0	3 0 0	1 12 0
Ludhiána	...	...	...	3 12 0	2 4 0	1 4 0
Jagraon	...	...	...	3 12 0	1 10 0	1 4 0

LOWER DHAIA LANDS.

				<i>Chahi.</i>	<i>Rousli.</i>	<i>Bhur.</i>
				Niai.	Khalis.	
				Rs. A. P.	Rs. A. P.	Rs. A. P.
Samrála	...	...	...	3 0 0	3 0 0	1 0 0
Ludhiána	...	...	...	3 8 0	2 8 0	1 2 0
Jagraon	...	...	...	3 8 0	2 8 0	1 2 0

UPLAND CIRCLES.

		<i>Chahi.</i>			<i>Rousli.</i>			<i>Bhur.</i>		
		Niai.			Khális.					
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Samrála ...	...	4	12	0	3	8	0	1	6	0
Ludhiána—								0	14	0
Upper Dhaia ...	...	4	8	0	3	4	0	1	6	0
Pawadh ...	...	4	2	0	3	0	0	1	4	0
Tihára ...	...	4	0	0	2	12	0	1	4	0
Jagraon ...	...	3	12	0	2	8	0	1	3	0

JANGAL CIRCLE.

<i>Well lands.</i>	<i>Rousli.</i>	<i>Bhur.</i>
Rs. A. P.	Rs. A. P.	Rs. A. P.
1 6 0	0 11 0	0 8 0

11. The application of these sanctioned rates would have yielded a total assessment of Rs. 11,25,697. The total of the village assessments actually announced was Rs. 11,12,644, or, after deducting the nominal assessment on revenue-free lands, Rs. 10,91,915, an increase of 18 per cent. on the previous demand of Rs. 9,25,677. Its incidence on the cultivated acre is Re. 1-8-5; that of the last settlement at the time of its introduction was Re. 1-6-8.

This increase is supported by an increase since last settlement of 62,506 acres, or 8 per cent. in the cultivated area, of 7,254 acres in the area irrigated from wells, of 1,097 in the number of wells, and of 91,113 in the total population between 1855 and 1881. The chief reason which now justifies an increased assessment is to be found in the rise of prices. The former assessment was made on the basis of the prices immediately before 1850, which were much higher than those which prevailed in the following years up to 1860, and which supported the expired settlement during the first years of its currency. But even starting from the prices at which the former Settlement Officer valued the produce when framing his assessments, the present Settlement Officer found that a rise of 25 to 33 per cent. had occurred, while when the comparison was made between the periods 1840—1859 and 1860—1879 the increase in prices was found to be from 50 to 65 per cent.

The Financial Commissioner remarks in his review that recent experience has shown that some of the arguments and assumptions of the Settlement Officer require modification, and that though the rise which has taken place in prices may justify an enhancement in assessment, yet this enhancement would not be so great as 50 or 65 per cent. The rise in prices reported by Mr. Kensington, the Settlement Officer of the adjoining tract of North Umballa, on a comparison of the 15 years 1846 to 1860 with the 25 years 1861 to 1885 was 59 to 66 per cent. Mr. Walker, then, does not appear to have over-estimated the rise, but the gradual attainment by the people of a higher level of living, the reduction of the standard of assessment from two-thirds to one-half the owner's net assets, and the serious increase in cesses by nearly an additional 10 per cent. on the revenue, must necessarily be weighed against the rise in prices.

It would seem, too, that the eastern part of the district has not benefited so largely from this rise as the western. The wheat, sugar and maize which it produces have risen relatively less than the millets and the inferior grains which it imports and consumes, and yet the increase in assessment is 18 per cent. in the Samrála Tahsil with an increase in cultivation of 5 per cent. against an increase of 16 per cent. in Jagraon Tahsil with an increase in cultivation of 10 per cent. These figures point to the present increase in assessment relatively to the increase in resources being greatest in Samrála, but it must be remembered on the other hand that Mr. Barnes, who was then Commissioner, and a very experienced Settlement Officer, held that the settlement now revised was lightest in its original incidence in Samrála and heaviest in Jagraon.

The distribution of the revenue was mainly left to the people themselves;—221 villages distributed it on shares, 203 by a general rate on cultivation, 201 by rates on irrigated and unirrigated lands, and 292 by soil rates (three or more classes). The people rarely recognized in their distribution the difference between Niai and other well land, nor did they make as great a difference between the classes of soil as had been recognized in the sanctioned rates.

The cesses noted in the margin are also sanctioned by His Honor. The Financial

	Rs.	A.	P.	per cent.
Old local rate ...	8	5	4	
School ...	1	0	0	"
Road ...	1	0	0	"
Post ...	0	8	0	"
Lambardárs ...	5	0	0	
Patwáris ...	3	2	0	

Total ... 18 15 4

* Now consolidated in the new local rate of Rs. 5-6-10 on annual value, or Rs. 10-13-4 on the land revenue.

Commissioner in his review asks that power should be reserved to order an enhancement of the rate of the Patwáris' cess, but a subsequent proposal to raise the rate to Rs. 4-6-0 per cent. was negatived by Sir Charles Aitchison

in 1886, and Sir James Lyall, concurring in that decision, sanctions the cesses as proposed without any reservation. He concurs in Colonel Wace's remarks in paragraph 15 of his review on the care which the Deputy Commissioner should take to prevent cliques and money-lending among the Patwáris and Kánúgos. The Kánúgo Agency has since Mr. Walker wrote his report been strengthened, and the second Náib-Tahsildár whom he considered necessary in the Ludhiána Tahsíl was appointed in 1884.

13. The incidence of the new assessment with cesses is Re. 1-13-0 per cultivated acre. The incidence of the former assessment and cesses in 1850 was Re. 1-8-9. The increase taken is, Sir James Lyall thinks, fully as large as the requirements of a sound revenue policy demanded. On the other hand, the comparison with the assessments of neighbouring tracts given in the Financial Commissioner's review, the prevailing cash rents and the half assets all show that the Government was entitled to the increase it has taken. Above all, the experience of the six years which have now passed since the introduction of the new assessments gives the Lieutenant-Governor full confidence that the new assessments are equitable and moderate, and he has no hesitation in sanctioning them. The Commissioner of the Division (Colonel G. Young), in forwarding the Revenue Report of the district for 1887-88, wrote : "The revenue demand is paid with exceeding punctuality and ease and not a single rupee remained in balance." Sir James Lyall fully concurs in Colonel Wace's view that it would be unwise to give this sanction for a longer period than 30 years, and he therefore sanctions the assessments for 30 years with effect in the case of the Samrála Tahsíl from the kharíf of 1881 and in the rest of the district from the kharíf of 1882.

14. One result of the past history of the district is that no less than Rs. 1,77,603 of the total land revenue assessment is assigned to jágírdárs, who pay commutation money for their former obligations of tribute or levies to the amount of Rs. 19,550 per annum. Half of the jágír income is enjoyed by the Malaudh family. The distribution of the jágír villages is shown in map No. V.

Besides the above, 8,708 acres are held revenue free. Zaildárs paid by a deduction of 1 per cent. from the land revenue were appointed at the present settlement, and ináms to the extent of $\frac{1}{4}$ per cent. on the assessment were granted to selected headmen. After allowing for all deductions, the new Government revenue roll stood at Rs. 9,14,298, an increase of Rs. 1,18,187 on the previous demand of Rs. 7,96,111. As protective leases for new wells expired, the Government demand will be further raised by Rs. 6,000. The gain to the jágírdárs is Rs. 25,391, rising eventually as well leases fall in to Rs. 25,974.

15. The work of the settlement was carried through with commendable promptitude. The establishment was engaged on settlement operations not much more than four years. The net cost to Government was Rs. 3,60,766, and as the initial annual gain to the land revenue was Rs. 1,18,187, Government recovered the whole expense of the settlement in little more than three years.

16. The Sirhind Canal was not yet opened for irrigation when the re-settlement was completed. Water was first given to 930 acres in the kharif of 1883.

The figures for subsequent years are as follows :—

TAHSIL.	AREA IRRIGATED IN ACRES IN			
	1884-85.	1885-86.	1886-87.	1887-88.
Ludhiána ...	121	4,731	7,576	13,780
Jagraon ...	1,423	13,056	9,449	16,153
Total ...	1,544	17,787	17,025	29,933

The distribution of the area for 1887-88 into rabi and kharif was—

				Kharif.	Rabi.
Ludhiána	...	...	...	4,855	8,925
Jagraon	...	...	...	4,773	11,380
Total	...	...	...	9,628	20,305

Wheat is the great spring crop on the canal lands, and of the 9,628 acres irrigated in the kharif of 1887, the most valuable crops were—

				Ludhiána.	Jagraon.	Total.
Sugarcane	...	...	...	1,422	53	1,475
Maize	...	...	...	1,442	2,631	4,073
Cotton	...	...	...	893	445	1,338

The opening of this canal has practically secured the district against famine, and it has been considered unnecessary to frame any proposals for famine organization, relief or prevention. As the lands watered from the canal were at settlement assessed in their unirrigated aspect, except such lands as were then watered from wells, it is of course within the competence of the Government to at any time levy an owners' rate under Part V of the Canal Act. The policy followed, however, has been to levy occupiers' rates on a fairly high scale and to defer the question of taking an owners' rate until the effect on rents of the canal irrigation and the high occupiers' rates has been fully ascertained.

17. The system which has been introduced at this settlement for the assessment of lands subject to the direct action of the river is sanctioned by the Lieutenant-Governor. It appears to have hitherto worked satisfactorily and to be

well adapted to the local conditions. The question of the system to be followed was discussed fully in the orders on the Revenue Rate Report of the Ludhiāna Tahsíl, and the rules now sanctioned were those which met with the approval of Sir James Lyall, then Financial Commissioner.

18. Formal sanction is also accorded to the record of rights, to the character of which the Financial Commissioner bears testimony.

19. In conclusion, Sir James Lyall heartily endorses the praise accorded by the Financial Commissioner to Mr. Walker, who performed the duties entrusted to him most successfully. He secured for the Government the increase of revenue to which it was entitled without giving the revenue-payers reason to complain of harshness or un-skillful distribution of the demand; he has framed an excellent record of rights; he has brought the settlement operations to an early termination, and has submitted a report which shows great knowledge of the district and its inhabitants and will be very useful in its future administration. Chapters VII, VIII and IX constitute the Settlement Report proper. The earlier chapters were written for the Provincial Gazetteer. The last chapter was intended for a volume of "Punjab Customary Law."

Sir James Lyall much regrets that Munshi Chiranjít Lál, Extra Assistant Settlement Officer, and Munshi Ishar Dás, Superintendent, are no longer alive to receive the acknowledgments of their work to which they would have been entitled. Munshi Ahmad Bakhsh, now an Extra Assistant Commissioner, and Munshi Jodh Singh, now a retired Tahsildár, are named by Mr. Walker as having given him valuable assistance, and Sir James Lyall has much pleasure in acknowledging their services.

ORDER.—Ordered that the above Review be published and forwarded to the Financial Commissioner of the Punjab for information and guidance, and to Mr. T. Gordon Walker for information.

Also that it be forwarded to the Government of India in the Department of Revenue and Agriculture for confirmation of the sanction to the assessment referred to in paragraph 13.



From—The Hon'ble W. C. BENNETT, C. S., Officiating Secretary to the Govt. of India,
Rev. and Agril. Dept.,
To—The Secretary to Government, Punjab.

I AM directed to acknowledge your letter No. 111 of April 25th, 1889, with which you forward, for the sanction of the Government of India, a copy of the orders passed by His Honor the Lieutenant-Governor on the settlement of the Ludhiána District.

2. The assessments to which the sanction of the Government of India is now required took effect over parts of the district in 1881, and in the remainder in the following year. They were not reported to your Government by the Financial Commissioner till February 1886, and the orders of the Lieutenant-Governor are dated April 25th, 1889, or more than three years after the receipt of the report from the Financial Commissioner, and nearly eight after the last assessments had been declared and realized. To interfere after so long an interval with arrangements which were announced under official authority, and have since remained undisturbed, would entail much hardship on the proprietors, and the delay, which could hardly have been unavoidable, puts it out of the power of the Government of India to take any other course than to sanction the proposals of the Punjab Government as they have been reported.

3. It is observed, however, that the revenue rates on which the assessment was based were deduced almost exclusively from the estimated rate of produce per acre for each class of crop. Such estimates are always liable to error, and the difficulty of arriving at exact results in the present case appears to have been increased by the large area of the plots taken for experimental cuttings, which must have precluded the Settlement Officer from exercising any effective personal supervision over the various processes of cutting, threshing and drying, so as to make it certain that nothing was abstracted before the final weighments were made. The average rates of produce thus deduced are considerably lower than might have been expected from the style of cultivation described in the report. The average revenue rate for the acre of cultivation over the whole district is nearly 30 per cent. less than half the average rental paid by tenants-at-will. The area in the occupation of that class of tenants was perhaps too small to be accepted as furnishing a standard for the assessment of the whole district, but the Government of India thinks that the rates paid by them should not have been put out of consideration. There is every reason to believe that the assessment is very moderate in its incidence, and it should offer no obstacle to the continued development of the prosperity of the agricultural classes.

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PREFATORY NOTE.

PART I of this Report was written for the Provincial Gazetteer; and in writing it I have followed as closely as possible the scheme drawn up by Mr. Ibbetson. This will account for many paragraphs which might otherwise appear to be out of place.

T. GORDON WALKER.

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SETTLEMENT REPORT

OF THE

LUDHIÁNA DISTRICT.

PART I.—Descriptive and Historical.

CHAPTER I.—DESCRIPTIVE.

1. Ludhiána is the most western of the three districts of the Amballa division. The main portion of the district lies between $30^{\circ} 33'$ and 31° North Latitude and $75^{\circ} 24'$ and $76^{\circ} 27'$ East Longitude, and has for its northern boundary the river Satlej, across which it faces the Jálandhar Doáb. To the east it adjoins the Ambálla, and to the west the Ferozepur district, while to the south it is separated from those of the Delhi and Hissar divisions by the tract of country which is partitioned between the Chiefs of Patiála, Jhínd, Nábhá and Malér Kotla. To the north, east and west the boundaries are fairly symmetrical, but to the south the district is cut into by the territories of the Chiefs named above. The political history of our acquisitions in these parts will account for the unscientific nature of the boundary on this side, and also for our having to retain a number of detached villages stretching as far south as $30^{\circ} 5'$, while two or three groups of Patiála villages lie surrounded by those of the Samrála tahsil. The continuous portion of the district has a length along the river of nearly 60 miles; while the breadth, north and south, is about 24 miles except where Patiála territory juts into it between the Ludhiána and Samrála tahsils.

2. The area of the district, as at present constituted, is by our settlement measurements 1,378 square miles, or 882,167 acres, of which the details are:—

			Cultivation.	Arable waste.	Barren waste, &c., &c.	TOTAL.
Acres	...	...	729,009	86,664	66,494	882,167
Per cent.	...	...	83	9½	7½	100

This area is contained in 914 villages, which gives an average of 966 acres for each village. This statement of number of villages and area does not quite agree with that given in the Regular Settlement Report; and the difference is due to changes in the course of the river, and the transfer of a few villages to and from Patiála. Notwithstanding its limited area the district is one of the most important in the Province, paying between 11 and 12 lakhs of rupees in land revenue, and having a population of more than half-a-million. If we exclude the outlying villages, it is probably more compact and convenient for administrative purposes than any other district, the remotest point being not much more than 30 miles from head-quarters, and access to almost every part being easy by rail, or by the good roads which run in all directions. The outlying villages number 39, and have an area of 125 square miles, which is included in the above details.

3. The district has no very striking natural features. The main physical divisions are the same as those of most Panjáb plain districts, *i.e.*, a low-lying alluvial tract along the river (here called Bét), and the uplands (called Dháia.)

4. The river Satlej forms, as stated before, the northern boundary of the district. Debouching from the Siwálíks just above Rupar, some 25 miles east of the boundary of the Samrála tahsíl, it flows due west along the top of the district for a distance of about 60 miles, and turns, as it leaves the Jagráon tahsíl, slightly to the north towards its junction with the Beás. Even when at its lowest, in the middle of the cold weather, the river has a considerable volume of water, the main stream being generally 100 to 200 yards in width, and 7 or 8 feet in depth. Some of the people living on the banks are able to ford it when very low, but even to them this is attended with danger. When in flood it spreads over the country to a width generally of two or three miles; and, even where confined by the Philour Bridge Works to its narrowest, it measures nearly a mile of running stream.

The river is bridged for the Sindh, Panjáb and Delhi Railway at Philour, just under Ludhiána town; and there are ferries with country boats at 13 places along its course through the district. The passage appears to be dangerous when the river is in flood, and boats are occasionally upset.

In former times there was a considerable amount of traffic carried in country boats down the river from Rupar, Machiwárah, Ludhiána to Ferozepur, and even to Sakkar; but this ceased with the opening of the railway in 1870, and nothing is now carried down except wood, or stones from the hills for the Bridge Works at Philour.

5. Like all Panjáb rivers the Satlej is constantly shifting its course in the floods of the hot weather, as there is nothing to keep it to one bed. Within the last 30 years we know that it has moved about

Natural Divisions: Bét and Dháia.
Description of the river Satlej.
Bridges and Ferries.
Navigation.
Changes in the course of the river: limits of the Bét tract.

four or five miles northwards in the first few miles of its course in this district; and there can be no doubt that within a not very distant period (local accounts say 100 years) it flowed just under the Ridge which separates the Dháia or highlands from the Bét, the older towns and villages like Bahlolpur, Machiwárah, Kum, &c., having been built on its *banks*. The division between uplands and lowlands is everywhere marked distinctly by this Ridge or high bank (Dhá); and between it and the present course of the river lies the Bét tract. To the east of the district the river and the high bank are five or six miles from each other; and this distance is maintained for the first 30 miles; but below the town of Ludhiána they gradually approach until in the Jagráon tahsil the Bét is only one or two miles in width, and finally disappears.

6. Immediately under the high bank along what was once the course of the Satlej now runs a perennial stream called the Budha Nála, which takes its rise in some springs near Chamkour in the Rupar tahsil of Amballa, and enters this district under Bahlolpur. Passing just below the town of Ludhiána, it flows into the Satlej in tahsil Jagráon, a few miles east of the Ferozepur border. When swollen by floods in the rains it has a considerable volume of water and covers the country about; but ordinarily the actual stream is only a few yards across, although there is in places a good deal of swamp about it. The water, except in the floods, is perfectly clear, and is used freely by the people for drinking purposes, but never for irrigation. The reason for this is that it is said to contain a large infusion of salts, but in any case it would have to be lifted to the fields; and, with the water level only eight or ten feet below the surface, it is as easy to dig small unlined wells where they are wanted.

In the Samrála tahsil a good deal of injury is done to what would be valuable land by the spread of swamp, the stream being only slightly below the level of the country, and all land within a short distance of it is injuriously affected by percolation. To the west the banks are high, and the land is cultivated right up to them. In the cold weather the Budha can be crossed on foot at certain points which are well known to the people; but generally the bottom is treacherous, and in the floods of the rainy season even at these fords the water is too deep for wading. There is a bridge at Ludhiána on the Jalandhar road; and there was one just under Machiwárah, which was a great convenience but has been allowed to go to ruin. The result is that in the floods the people of the Bét are almost entirely cut off from the rest of the district. The floods do not last very long, being caused by rainfall in the plains only.

7. In the immediate vicinity of the river is a strip of land liable to annual inundation and called "mand" or katcha, and in this we see the soil of the Bét in process of formation. Something occurs to divert the force of the river from a certain point; and, when the floods subside, a shallow deposit of silt is found covering

General description of the Bét tract: soil.

what was before an expanse of sand. The accumulation of silt goes on for a year or two, being assisted by the growth of "dib" grass (*Eragrostis cynosuroides*), which is generally followed by "pilchi" called here "jhao" (*Tamarix orientalis*). When the deposit is about six inches in depth, the land becomes capable of yielding crops; and it is gradually reclaimed by being put through a regular course of cultivation. The formation of a deposit is by no means a uniform operation. A few years may leave three feet of first-rate soil, or the deposit may remain so shallow as to make cultivation scarcely worth while; and one often sees apparently good land abandoned by the people after a trial. The action of the Satej in this way appears to be mostly beneficial. The "mand" tract of the first 20 or 30 miles is probably one of the richest pieces of land in the country, and with the very slightest labour magnificent crops are raised in what is really virgin soil. Lower down to the very end of the district the silt is also most fertilizing, although the crops are generally of an inferior class. The river is of course a very powerful and capricious agent, and the saying "Ek sál amír ék sál faqir" is applicable to this as to any other riverain tract. The poor cultivator may find, when the floods have subsided, that a piece of barren sand has taken the place of his fertile fields; and that he owns no land that will yield him any thing. In the older or packa Bét the process of formation has ceased long ago; but there are abundant traces of it. High ridges of river sand occur, and the deposit of soil is generally three to five feet in depth, though in places the sand actually appears on the surface or is just concealed by a coating of soil. The soil of the "mand" is generally a stiff, moist loam of dark colour; and that of the packa Bét of the same character, but drier and of a lighter tint, the proportion of clay being considerable. There is a great difference between the produce of the first 10 or 15 miles of the Bét and that of the lower parts, but this is perhaps due to the heavier rainfall in the former rather than to any thing in the quality of the land. The Bét is everywhere cut up by streams, which convey the drainage to the river. In the rains these overflow their banks and flood the country; but they are mostly dry for the rest of the year. In such a damp tract it was to be expected that in places impeded underground drainage should produce "kuller" or soil so impregnated with salts as to be barren. There is some of this along the Budha nála, but not much elsewhere. Saline efflorescence appears here and there all over the Bét, and patches of cultivated land will be found in which the salts have prevented the growth of the crop; but the evil is not widespread. It is worst about Nurpur in Ludhiána and in the adjoining part of Jagráon Bét, where the course of the drainage is in places away from the river, and the water oozes out just under the high bank.

8. From the high bank the Dháia or upland part of the district stretches to the south in a plain, the uniformity

The Dháia or Uplands.
Surface of the country.

of which is unbroken by hill or stream. The surface is perfectly level, except in the immediate

neighbourhood of the high bank, or where a sand ridge occurs. There

is a very gentle slope from north-east to south-west, at right angles to the Siwálíks, and the lines of drainage follow this. In the neighbourhood of the high bank, the rainfall is all absorbed by the light soil; but further inland there are some very well defined drainage lines, locally known as "rao," which in a year of heavy rain carry a considerable body of water along the depressions which they have apparently worn for themselves. Some of these "raos" can be traced from one end of the district to the other; and have most of them been carefully recorded by the Canal Department. They are a cause of complaint to the villages lying on them, as they do considerable injury to the crops and at times destroy wells. This is the whole extent of the harm done by them, for, even where the flow of water is partially impeded by the embankments of the Grand Trunk Road, the Railway, Canal &c., there is never anything approaching to swamp.

9. In the neighbourhood of the high bank the surface is uneven, and the upper soil is a poor light sand, shifting under every wind and blown into hillocks. There is a good subsoil, however, and this will account for the very fair crops that are raised out of what appears little better than a wilderness. This light sandy tract extends inwards for four or five miles, the surface getting gradually more even, and the soil improving. South of it in the main portion of the uplands every variety of soil will be found from a very stiff clay to the lightest of sands. In the half of the district east of the Malér Kotla road the prevailing soil is a stiff loam of darkish colour, with a good deal of clay in it, while to the west of this road a much larger portion of the area is light loam or sand. But everywhere sand occurs, being confined in the Samrála tahsíl to two very clearly marked belts of two or three miles width, which run in a south-western direction and appear to indicate the course of some old hill-stream or drainage line. Elsewhere, scattered over the district, there are numerous ridges of sand, covering considerable areas, and presenting the appearance of continuity for short distances, while elsewhere detached patches crop up in a manner quite unaccountable. These ridges of sand are most common in the south-western portion of the district about Pakhowál, in tahsíl Jagráon and in the "Jangal" or detached villages. They rise in places to a height of 20 or 30 feet; and, especially in the Jangal, where they occur most frequently, quite shut in the view, and give the country an undulating appearance.

10. There are no very well-recognized subdivisions of the uplands. The Bét people talk of the whole as "Dháia," though they will sometimes refer to the "Jangal" country as something beyond the Dháia. Minor subdivisions of the Dháia. The people of the eastern portion speak of the whole tract to the south-west of the district, including our detached villages and part of Jagráon tahsíl with the Patiála and other territories, as "Jangal." They talk of it as a country where, although the rainfall is scanty the produce of the unirrigated crops is very fine; where the land

is new and there is plenty of it ; where, instead of the constant drudgery necessary under a high system of agriculture, the cultivator has merely to sow his seed, and does what he pleases till harvest time. On the other hand the Jat of the Jangal will compare his sandy fields, where only the coarsest grains can grow, with the rich "Pawádh" with its sugar, cotton and maize fields, where the produce of a single acre is equal to that of a holding of his land. There is then, if we exclude the narrow sandy strip of land just over the Bét, which I have before described and which is uniform along the whole length of the district, this general distribution into the *Pawádh*, or eastern tract, and the *Jangal* or south-western. The characteristics of the former, which comprises the high lands of the Samrála tahsíl, and all the part of Ludhiána east of the Maler Kotla road, are a soil which is generally a fertile loam, rather stiff in places ; a high rainfall and a very large proportion of irrigation, with (what is the natural result of this combination) a very highly developed condition of agriculture, all the superior crops being grown. Across the Maler Kotla road the soil grows much lighter, and the rainfall less, while irrigation becomes difficult, and the higher crops disappear (first sugarcane and then cotton) ; till finally in our outlying villages irrigation is unknown, the spring level being over 100 feet from the surface, and only the hardiest crops being able to subsist on the scanty moisture. There is, of course, an intermediate tract, and this is sometimes called *Tihára*, in which would be included most of the Jagráon tahsíl, and the country about Pakhowál in Ludhiána. The people of the Jagráon tahsíl speak of the whole country south of the Grand Trunk Road as "*Jangal*" or "*Rohe*," reserving the name Dháia for the tract between it and the high bank. This is the most correct use of the latter term, which does generally mean the land just over the Dhá.

11. It was not to be expected that in such a highly cultivated district there should be much room for the spontaneous growth of trees or shrubs. There are in some villages of the Bét small plantations of kikar &c., reserved by the people. In the uplands, even at the last Settlement, there was little growth of jungle in the uncultivated lands ; and since then the cultivation has absorbed most of the waste that was left. In a very few villages in the upper part of the district there is a small area still left under dhak (*Butea frondosa*), forests of which must at one time have covered the face of the country. This tree requires a good deal of rain and a hard soil, so that it is not to be found in the south-west of the district and in the outlying villages ; but in those parts there is a comparatively much larger area of waste still unbroken, and covered with the harder "jand" (*Prosopis spicigera*), "karil" (*Capparis aphylla*), &c. I doubt if there will be much growth of any sort left in ten years, for already, since our assessments were announced, the people have begun to bring the remaining waste under the plough. Trees (generally kikar and bér) are scattered about the fields, and line the village roads, or are to be found round the village site ; and the general result, except in the light-soiled villages to the south-west, is to give one looking across the country the impression of its being well-wooded. The Government

Flora : Trees.

roads have in places along them fine avenues of all sorts of trees (shísham, siris, &c.), and in a few years the canal also will have a very good show. Besides this there are two considerable plantations under the Forest Department, one in the Civil Station and one on the Philour road near the river. The Maloud Sardárs have two or three pieces of "Bír" or forest in the neighbourhood of Maloud and of Sahua; and these cover a good deal of ground. The following is a list of the more common trees of spontaneous growth to be found in the district :—

Vernacular or Local Name.	Botanical Name.	REMARKS.
Kikar ...	<i>Acacia Arabica</i> ...	Grows in most parts of the district, but best in the east. Affects a stiff soil, and likes rain, but is very hardy. It is the zemindar's tree <i>par excellence</i> , being most useful for all agricultural purposes and roofing.
Bér, Béri ...	<i>Zizyphus Jujuba</i> ...	Grows in most parts of the Dháia, and does well in sandy soil. Useful for its fruit, and also for its wood for roofing. Is planted in groves as a protection against sand drift.
Pápal: Barota or Bar	<i>Ficus religiosa</i> ; <i>Ficus Indica</i> .	Grow in all parts of the Dháia, where planted; generally on the edge of the village pond; useful for shade only.
Pilkan ...	<i>Ficus venosa</i> ...	Takes the place of the above in the Bét; grown for shade.
Farwáh or Farásh	<i>Tamarix orientalis</i> ...	Grows very generally where planted in the Bét, mostly round the village site; also, but more rarely, in the uplands. Useful for roofing.
Shísham ...	<i>Dalbergia sisso</i> ...	Grown along roads &c. by Government.
Phulái ...	<i>Acacia modesta</i> ...	Grown in Bét and Dháia, often in groves; wood is useful for roofing, making doors, &c.
Dhék or Bakáin ...	<i>Melia sempervirens</i> ...	Planted at the wells in the Bét; grows very fast, and wood useful for roofing. The Aráiens and Sainis usually grow the tree round their wells for its shade.
Nim ...	<i>Azadirachta Indica</i> ...	A good tree for shade; not very common, and growing by itself both in Bét and Dháia. Wood is useful.
Tut ...	<i>Morus</i> ...	As above; wood is useful.

Local Name.	Botanical Name.	REMARKS.
Dhak, Jand and Karil.	<i>Butea frondosa</i> ... <i>Prosopis spicigera</i> ... <i>Gupparis aphylla</i> ...	} Jungle trees (see above in the text).
Kaimb	.....
		There are one or two groves of this tree, which is useful only for shade.

It is not necessary to give a detailed list of the various fruit trees to be found in the gardens about the city and elsewhere, as these are the usual ones of the Panjáb plains. Oranges and loquots seem to do best ; but the district is a bad one for fruit.

12. In newly formed land along the river is to be found the usual growth of "pilehi" (para. 7), here known as "jháo." It is very useful for making baskets, and for lining katcha or temporary wells. There is also an abundant growth of "dib" grass (para. 7), of which chitái or matting is made ; and in places of a plant called "káhi," which, when young and tender, is used for fodder, and when old hardens into a reed, used to make an inferior sort of pen. In the Budha there is a weed called "jála" which is very largely used in clarifying sugar (see Note on Sugar.)*

"Sarkanda" (*Saccharum moonja*), generally called "Sarwár," grows in many places of the Dháia, and is largely planted along roads, and where there are sand hills with a view to stop the drift, which it does more or less effectually. The various uses to which this grass is put need not be detailed. There is a regular system of cultivating it. The year's crop is cut down in March or Apfil, and fire applied to the stumps with a view of promoting fresh growth. It begins to spring immediately after the rains, and attains a height of ten feet or upwards. Large sums are realized by the sale of what is grown along the Government roads : and in places round Ludhiána, it is found profitable to give up the cultivation of inferior sandy soils and to plant this. There is a small shrub called "jháre,"

which deserves special mention for its usefulness. It is a small, prickly bush, which grows in abundance in the waste land of most villages ; and, as it is called "mallah" in the Jangal, I identify it with the wild ber (*Zizyphus nummularia*). Twice in the year the growth in the village common land is cut, and the produce most carefully divided according to the proprietors' shares. When dry it is beaten with sticks and tossed with a pitch fork ("salang"), and the leaves thus separated from the branches, which make a most excellent hedge that will keep out anything. The leaves are given to the cattle as fodder, either alone or mixed with straw, and are said to be most strengthening. "Ak" (*Calotropis procera*) grows all over the district in the fields ; and is cut down for fire-wood as fast as it appears.

The principal weeds that grow amongst the cultivation are "piāzi,"

Noxious weeds. "kasumbhi" and "lehi." The two first are so named from their resemblance to the onion and the safflower, and the last is the common field thistle. They all three flourish throughout the district; but the Bét soil appears to suit them best. "Piāji" does the most harm, and a great part of the cultivator's time is taken up in rooting it out of his fields. The process is not attended with much success in the Bét and in Mahomedan villages elsewhere, and one often sees a field of wheat completely killed down by it. It appears to be impossible to clear land of the weed altogether, for there is a fresh growth every year; and, if left alone, it would very soon cover the fields. Other less common weeds are "báthu," "churi saroch," "jounchi," "harmal," "báru."

13. The domestic animals will be appropriately mentioned elsewhere. For the following very complete lists of the larger mammals, the game birds, venomous snakes, and fishes commonly found in the district, I am indebted to Mr. F. Field, who has, in addition to an extensive knowledge of natural history, a minute acquaintance with the district :—

List of the larger mammals found in the Ludhiána District.

Name, English and Hindustani.	Scientific Name.	Habitat, &c.
The Otter (H. Ood)	<i>Lutra Nair</i> ...	Found all along the Satlej; grows to a large size. They are also found occasionally along the reedy bed of the old bed of the Satlej during the cold weather.
The Wild Cat (H. Jangli Billi).	<i>Felis Chaus</i> ...	Common about Ludhiána and in all grass jungles throughout the district where they do great damage to the game of all sorts.
The Wolf (H. Bheria, Bhagiār).	<i>Canis Pallipes</i> ...	Found scattered throughout the district, chiefly along the banks of the Sirhind canal. They seem to have increased within the last few years in this district, and do considerable damage to the village goats and calves.
The Jackal (H. Gidar).	<i>Canis aureus</i> ...	Common throughout the district.
The Indian Fox (H. Lumri).	<i>Vulpes Bengalensis</i> ...	Thinly scattered throughout the district.
The Desert Fox (H. Lumri).	<i>Vulpes leucopus</i> ...	Ditto. Rarer in the cultivated parts, but commoner than <i>V. Bengalensis</i> towards the south and south-west.

List of the larger mammals found in the Ludhiāna District.—(Contd.)

Name, English and Hindustan.	Scientific Name.	Habitat, &c.
The Porpoise (H.....).	<i>Plantista gangetica</i> (?) <i>P. Indi.</i>	Found in the Satlej; commoner in the cold season. The one found here is probably <i>P. Indi.</i>
The Hare (H. Saha, Sayar, Khargoshi).	<i>Lepus ruficaudatus</i> ...	Found everywhere throughout the district; most plentiful to the south-west, wherever there is sufficient jungle; common all along the canal banks.
The Wild Pig (H. Jangli Soor).	<i>Sus Indicus</i> ...	Found along the banks of the Satlej, wherever there is sufficient cover; but common nowhere. Chief habitat; the long grass grown in the angle to right of Railway Line to Phillour, where bunds, &c., have been erected.
The Nilgai (H. Roz).	<i>Portax pictus</i> ...	A few are found to south and south-west of district in jungles, bordering on native states, where, the chiefs being Sikhs, they are more or less preserved, and are more common.
The Antelope (H. Mīrg, Harn).	<i>Antelope begoartica</i> ...	Found plentifully throughout the district. They rarely visit the lowlands (Bél), but chiefly confine themselves to the higher land, where there are large plains surrounded by cultivation. Formerly large herds were found in the district; but now it is rare to see a herd of 100 individuals. In the south-west of the district their place is taken by the gazelle, and they are rarely or never seen. This is the more strange as they are very common in Hissar and Sirsa, districts closely resembling the south-west of this district in quality of soil, &c.
The Gazelle (H. Harni, Chit-kara).	<i>Gazella Bennettii</i> ...	The ravine deer of sportsmen, common throughout the district, chiefly wherever sand hillocks dot the plains; very common to south-west of this district, where it entirely supplants the antelope.

List of the Game Birds found in the Ludhiāna District.

Name.	Scientific Name.	Habitat, &c.
The large Sand Grouse (H. Bhatitar).	<i>Pterocles arenarius</i> ...	Comes in immense flights in the first week of November, though occasional small flights may be seen in the end of October. It remains till March and re-migrates north.
The large Pintail Sand Grouse (H. Bhatitar).	<i>P. alchala</i> ...	Occasionally found mixed up with <i>P. arenarius</i> , but rare. Probably more numerous to the west and south-west of the district.
The small Sand Grouse (H. Bhatitar).	<i>P. exustus</i> ...	The rock pigeon of some sportsmen; much rarer than <i>P. arenarius</i> ; commonest to south and south-west of the district.
The Peacock (H. Mohr).	<i>Pavo cristatus</i> ...	Found in very many parts of the district. It is semi-domesticated, and is generally to be found near villages. It is held sacred by some of the villagers.
The Black Partridge (H. Kala Titar).	<i>Francolinus vulgaris</i>	Nowhere very common; but a few are to be found along every mile of the Sirhind Canal. Also found in all the jungles to the south of the district. Not common to the south-west, where the grey partridge has supplanted it.
The Grey Partridge (H. Titar).	<i>Ortygornis Pondiceriana</i> .	Found sparingly everywhere wherever there is any jangle; near a village they seem specially to congregate; but wherever there is grass or bush they are to be found. To the south-west of the district they are most plentiful.
The Quail (H. Batair).	<i>Coturnix communis</i> ...	Plentiful from April till the <i>rabbi</i> crop is cut. Again they come in on September and stay till the <i>khari</i> crop is cut; some few birds stay in long grass, &c., all the cold weather, and a very few stay and breed here in June and July.
The Rain Quail (H. Batair).	<i>Coturnix coromandelica</i>	A rainy season visitor. It comes in in July when its peculiar "wheet-wheet" is to be heard in cloudy weather all day. It leaves before <i>C. communis</i> arrives as a rule, though occasionally both birds may be flushed in one field.

List of the Game Birds found in the Ludhiána District.—(Contd.)

Name.	Scientific Name.	Habitat, &c.
The large Button Quail (H. Batair).	<i>Turnix Dussumieri</i> ...	This bird occasionally is flushed when quail shooting in September and October, but is by no means plentiful and stays a very short time.
The Button Quail (H. Chota Batair).	<i>Turnix Sykesii</i> ...	Found occasionally in the spring and autumn crops. It has a very strong scent, and dogs invariably put them up, though they may fail to put up a common quail.
The great Bustard (H. Tooghár).	<i>Eupodotis Edward-sii</i> .	Though I have no actual information of the occurrence of this bird in this district, I cannot help thinking that it must during certain times of the year visit the south-west of the district, probably during the hot weather and rains.
The Oubara (H. Khur Mohr).	<i>Houbara Marquessii</i> ..	A very few of this species visit this district during the cold weather. Occasionally a flock takes up its residence near an open bush jungle and stays for a month or so; but this is rare.
The Lesser Florican (H..... ?)	<i>Sypheotides auritus</i> ...	Once and only once this bird was seen in this district. It was in September and was emigrating probably. It was in the "People's Park" at Ludhiána close to the civil station.
The Lapwing (H..... ?).	<i>Vanellus cristatus</i> ...	Found all along the Satlej, but chiefly along the banks of the "Budha Nála," where it is plentiful during the cold weather.
The white tailed Lapwing (H. ...?)	<i>Chettusia leucura</i> ...	Common along the "Budha Nála" every cold weather, notwithstanding Jerdon's remark that it is a rare bird in India.
The Sarus Crane (H. Taras).	<i>Grus antigone</i> ...	Occasionally found in pairs about the district, chiefly to the south.
The Koolan (H. Koonj).	<i>Grus cinerea</i> ...	A cold weather visitant in large numbers. It comes in in October and leaves in the end of March; spends the day near or on the river Satlej and flies inland to feed on the green crops or sown grain morning and evening.

List of the Game Birds found in the Ludhiána District.—(Contd.)

Name.	Scientific Name.	Habitat, &c.
The Demoiselle Crane (H. Khar-khair).	<i>Anthropoides virgo</i> ...	On its passage to and from lower India, this handsome bird occasionally stops to rest and feed on the Satlej. It is only in October and the latter half of March that it is ever seen, and then only for a day at a time. It never makes a prolonged stay here, being more of a wheel-loving bird than its congener <i>G. communis</i> .
The Snipe (H. Cháha).	<i>Gallinago Scolopacinus</i> .	The full snipe of sportsmen. Common all along the "Budha Nála" and rushy places throughout the district. The first flight arrive about middle of September; no more come till October, when they straggles in; nowhere to be found in considerable numbers till January. They stay till end of March, and the last flights pass through in the end of April.
The Jack Snipe (H. Cháha).	<i>G. gall</i> ...	Arrive in the end of September and stay till April.
The Pintail Snipe (H. Cháha).	<i>G. stenura</i> (?) ...	This bird, so much commoner in the Indian Peninsula than the Panjab must, I fancy, be occasionally found in this district, but it has never been met, though sportsmen have examined many snipe shot the last two years.
The Painted Snipe (H. Cháha).	<i>Rhyngæa Bengalensis</i>	Found throughout the district, commonest in the early cold weather. Affects all the swamps and pools. Breeds in the district where it has been seen all the year round.
The Godwit (H. Cháha).	<i>Limosa egocephala</i> ...	Found in the cold weather and beginning of the hot near the Satlej on all large pools and swamps.
The Curlew (H. Cháha).	<i>Numenius arquata</i> ...	Frequents the "Budha Nala" and the land lying near the Satlej where it feeds in the fields, &c. A cold weather visitant.
The Flamingo ...	<i>Phœnicopterus roseus</i> ...	Stragglers no doubt visit this district during the late rains and early cold weather. Shot once at Miáni.

List of the Game Birds found in the Ludhiana District.—(Contd.)

Name.	Scientific Name.	Habitat, &c.
The Barred-headed Goose (H. Mag).	<i>Anser indicus</i> ...	Visits the district in considerable numbers in the cold weather; stays from October to March. They spend the day by the rivers, visiting the gram fields in land during the morning and the fields near the rivers in the afternoon.
The Black-backed Goose (H. Nagta).	<i>Sarkidiornis melanotus</i> .	Though there is no actual record at hand of this rainy season bird visiting this district, there is no doubt it may be found occasionally towards Miāni, Machiwāra, &c., in the rains.
The Grey Goose (H. Mag).	<i>Anser cinereus</i> ...	Visits the district during the cold weather. Habits identical with <i>A. indicus</i> . Some few flocks live in the interior of the district for two or three months away from the Satlej.
The White-bodied Goose-teal (H. F).	<i>Nettapus coromandelianus</i> .	Found occasionally in the beginning of the cold weather and occasionally in the hot, along the Satlej and Budha Nala.
The Whistling Teal (H. Murghabi).	<i>Dendrocygna awsuree</i>	Found during the hot weather all along the Satlej.
The Ruddy Shield-rake (H. Surkhāb, Kawuk).	<i>Casarca rutila</i> ...	Visits the "Budha Nala" occasionally in the cold weather, and in considerable numbers the Satlej. Feeds often on gram inland in large flocks.
The Shoveller (H. Murghabi).	<i>Spatula clypeata</i> ...	Visits the district in the cold weather, and may be found on all village tanks and jheels till April.
The Mallard (H. Murghabi).	<i>Anas boschas</i> ...	Cold weather bird, found in huge flights in the Satlej and also on "Budha Nala." Arrives in November.
The Spotted-billed Duck (H. Murghabi).	<i>Anas poecilorhynchos</i> ...	The "wax bill" of some, found occasionally on the Satlej and "Budha Nala" during the hot weather as well as the cold.
The Gadwall (H. Murghabi).	<i>Chaulelasmus streperus</i>	Comes in in October, and is very common in all jheels as well as on the Satlej and "Budha Nala." Comes at night in huge flights to feed on the weeds in the nala.

List of the Game Birds found in the Ludhiána District.—(Contd.)

Name.	Scientific Name.	Habitat, &c.
The Pintail (H. Murghábi).	<i>Dasila acuta</i> ...	A few flights are seen every year. Commonest in the beginning of the year in the ponds in the interior of the district.
The Widgeon (H. Murghábi).	<i>Mareca penelope</i> ...	Some few are seen every cold weather, but never in any numbers.
The Teal (H. Murghábi).	<i>Querquedula crecca</i> ...	One of the commonest cold weather birds. Found in all pools and on Satlej and the "Budha Nála"; comes in end of September and goes in April.
The Garganey (H. Murghábi).	<i>G. coicia</i> ...	Some few visit the district in September and October; but disappear again till March. Nowhere very common.
The Red-crested Pochard (H. Murghábi)	<i>Branta rufina</i> ...	Visits the Satlej and "Budha Nála" in large numbers in February and March. It has also been shot in July in the district.
The White Eye (H. Murghábi).	<i>Aythya nyroca</i> ...	Visits the Satlej and "Budha Nála" in the cold weather.
The Golden Eye (H. Murghábi).	<i>Fuligula cristata</i> ...	It is the tameest and the commonest duck found; occasionally a few flights visit the district in the winter, principally in March.
The White-chaded Duck (H. Murghábi).	<i>Erismatura leucoccephala</i> .	One specimen of this very rare bird was shot in this district.
The Merganser (H. ?).	<i>Mergus castor</i> ...	Found on the Satlej occasionally though rarely during the cold weather.
The Snaw (H. ...?).	<i>Mergellus albellus</i> ...	Found occasionally in the cold weather.
The Grey Pelican (H. Painh).	<i>Pelecanus Philippensis</i>	Found in the "Budha Nála" and Satlej during the hot weather and rains.

List of the Thanatophidia or Venomous Snakes in the Ludhiána District.

Name.	Scientific Name.	Habitat, &c.
The Cobra (H. Kala Samp).	<i>Naja tripudians</i> ...	The most deadly, as well as the most common, of all the poisonous snakes in the more cultivated parts of the district, and wherever there is cultivation, gardens, &c., also in all the jungles. It grows to a large size, having been killed 6 feet long. In the open sandy parts of the district it is supplanted by <i>E. carinata</i> .
The Ringed Snake (H. Karait ?).	<i>Bungarus cœruleus</i> ...	Inhabits the same country as the cobra, except that it is not found in jungles. Commonest about gardens where there are old walls, &c. Hardly less deadly than the cobra, and as it has a habit of curling up by doors and under chicks, &c., and not moving at the approach of man, it is a most dangerous snake. It is generally known by the name of the "Karait."
The Russell's Viper (H. ?)	<i>Daboia Russellii</i> ...	Rare in this district, but found occasionally, chiefly towards Machi-waráh and Bahlolpur to the north-east of this district.
The Chain Adder ...	<i>Echis carinata</i> ...	Very common throughout the district in the drier and more sandy parts. A small sluggish snake and fortunately less deadly than any of the three foregoing species; otherwise there would be more deaths from snake bite than there are. On being met at night it never attempts to get out of the way, but curls up in an attitude of defence and gives out a hissing noise by rubbing its carinated scales together. When a report of the poisonous snakes of this district was being prepared in 1871 (?) a very great number of these snakes were brought in. Their captors said they found them under any old logs about the fields or villages on the higher lands. This is the celebrated "Kupper" of Scind probably, where it appears to be more deadly than in the Panjáb.

List of the commoner Fishes found in the Ludhiána District.

- The Mahseer ... Found throughout the year in the Satlej and the Budha Nala. In the Satlej they run to a large size, some specimens weighing about 50lbs. and over. They spawn in the rainy season.
- The Rohoo ... Found in the Satlej and the Budha Nala; is even commoner than the mahseer. It spawns in July and August. It runs to about 20 or 30lbs.; larger specimens are rarely found.
- The Sewal ... When in condition one of the best fish for the table found here. There are several varieties of this fish. Its appearance changes greatly with the season and the water it is found in. It spawns late in the year, and the young may be seen in countless numbers in pools at that time.
- The Batehua ... During the rains, after the first heavy floods have swept down the Budha Nala, this fish begins to run up. It is rarely in good condition owing to the thickness of the water, but is notwithstanding the very best eating fish to be had here. In the Satlej it is found in great quantities near any places where young fish congregate. It probably migrates for part of the year and also to spawn.
- The Tingra ... Small specimens of this fish are found in any numbers in the Budha Nala and Satlej. It rarely runs large, yet specimens of 5lbs. or so are sometimes caught by the fishermen.
- The Eel ... "Bán." Common in the Nala and Satlej. In the latter it is occasionally found very large, 8 or 9lbs. in weight, but in the Budha Nala specimens of 1lb. even are rare. It is found all the year round and does not appear to migrate.
- The Mohoo ... This fish is found after the rains. It runs up after the heavy floods in the rain, and grows to a large size. Very commonly found 5lbs. in weight. It has a curious habit of rising constantly to the surface of the water and turning over, showing its very broad silvery side.
- The Chapta ... Very like the mohoo, and closely allied to it in habit. It is commoner, and is found all the year round. It has the habit of turning over on the surface. It is a small fish rarely weighing $\frac{1}{2}$ lb. in weight.
- The Mallee ... A common and very voracious fish, the shark of this part of the world. It runs to a huge size in the Satlej, and fair sized fish come up the Budha Nala in the rains. It breeds in July and August like the rohoo.

- The Singhee ... A not very common and very repulsive looking fish, very dark purple or red. Said to be a good table fish; but its looks rather keep people from trying it.
- The Chilwa ... Common in both the Sattlej and the Budha Nāla, where in autumn and spring it may be seen rising at gnats in hundreds like trout. By all accounts, owing to excessive netting with small meshed nets, this fish has been considerably thinned out near towns.
- The Rewa ... Something like a small mahseer, but with scales like a grayling in parallel rows along the body. Has a curious habit of swimming in companies about on the surface with its mouth out of the water during the late autumn and spring.

14. In the cold weather wild fowl are plentiful along the river and in the Budha Nāla, but they are much disturbed in the neighbourhood of Ludhiāna by native "shikaries." I have had very fair snipe shooting under Māchi-wārah. Flocks of kulan and geese are also to be met with in the fields. In the uplands there are a good many hares, though the Jat of the present day is fond of coursing: and partridges, black and grey, are to be found in the sugarcane fields or where there is a small patch of jungle. Quail are abundant in their seasons; and sand grouse of several sorts are to be found in numbers in the cold weather amongst the "moth" &c., stubble in sandy soils, as well as flocks of wild pigeon. Peacocks are common in the eastern part of the district and live in the sugarcane fields. The ordinary Jats have no great objection to their being shot; but the birds are really half tame, and only eatable when young. Owing to the absence of cover it is not generally an easy matter to make a large bag, except, perhaps, amongst the quail or snipe: and one brings home from a day's shooting a most miscellaneous collection of game picked up in the fields. In some of the detached villages, which have a growth of jungle left, it is possible to get a good bag of grey partridge and hare: and there are some "birs" or reserves in Patiāla territory which are strictly preserved and abound with game. Pigs are very common along the river just under Ludhiāna. They find shelter

Pigs. mostly in the forest plantation on the Philour road and in a large piece of land beside the river, covered with high grass, which has been taken up by the Railway Company for purposes of protection of their bridge. The number of pigs appears to have increased within recent years; and it is only here that they are found. They come out at night in swarms and ravage the fields to great distances about, devoting most of their attention to sugarcane, maize, &c., of which they are fond: but also rooting up the young spring crops from sheer vice. They are fondest of the "ponda" or thick sugarcane; and in Rajowāl and other villages where it is grown extensively the people are out all night along

the boundaries of their fields with fires lighted and keeping up a continual noise. The pigs, however, do not appear to mind this, and get into the fields. The amount of injury done by these pests is very large; but no systematic attempt has been made to kill them down. It is not possible to ride after them owing to the rough and broken nature of the country and the difficulty of getting them out. An occasional sportsman shoots a few, but the loss is not felt. The antelope

and ravine deer are common in most places; and one has to go a very few miles from Ludhiána to get a good black-buck. The deer are very tame; but shooting them is attended with considerable risk, owing to the perfectly flat nature of the country, and the number of people that are always working in the fields. Nilgai are found in some of the waste lands belonging to our detached villages.

15. The only mineral product of the district is kunker, which is quarried in many places, and is to be found in sufficient quantity and at so convenient sites that there is no difficulty in obtaining a supply for all the metallised roads and for lime. Saltpetre used to be made in a few villages; but the manufacture has been given up.

16. The rainfall has been observed for a number of years at the three tahsil head-quarters which are fairly central except in the case of Ludhiána. The following is the result of the observations of 18 years :—

Samrála	...	...	...	27 inches.
Ludhiána	...	...	...	27 "
Jagraón	...	...	...	21 "

From a comparison with the averages of surrounding districts, I calculate that the fall varies for the continuous portion of the district from about 30 inches at Sherpur in the north-east corner to less than 20 inches at Ilātur in the south-west, a distance of about 55 miles. In the outlying villages the fall is generally about 17 inches, but goes as low as 15, probably, in the extreme south ones.

The following statement shows the distribution during the years 1869—83 of the rainfall at Ludhiána over the twelve months :—

MONTH.	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	Average.
April ...	...	...	2	3	18	...	1	...	19	11	35	...	...	13	7
May ...	...	...	1	3	7	4	2	17	9	6	23	4	...	...	9
June ...	...	11	27	76	22	1	19	3	1	12	2	46	24	29	2
July ...	16.4	4.2	3.5	19.7	11.3	7.0	4.4	5.2	4.6	8.2	2.6	13.5	9.3	3.3	8.1
August ...	14	7.5	1.1	15.5	5.	1.7	8.9	1.6	2.8	12.2	4.1	3.7	8	4.7	5.6
September ...	10.3	2.8	.5	2.6	2.9	2.6	17.7	1.1	12	1.7	.5	1	.3	1.3	4
Total 6 months ...	23.2	17.5	13.3	42.5	23.3	14.4	33	10.8	22.2	28.1	12.2	19.7	20.6	10.7	21.3

MONTH.	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	Average.
October ...	1.2	...	...	...	1.1	...	1.	.7	2.1	...	...	...	...	...	.4
November ...	...	...	...	...	...	...	...	...	.8	...	...	...	...	...	.1
December ...	...	...	.4	.8	.4	...	...	.5	...	6.0	.1	9	...	...	.7
January ...	1.8	.1	...	2.1	.4	2.1	...	...	2.	.9	...	.1	2.7	3.2	1.1
February ...	.4	.1	.4	.2	...	1.7	1.6	.6	2.3	1.3	...	.4	.6	.4	1.2
March ...	.67	1.8	...	.5	1.6	.6	...	2.6	2.6	.3	1.8	...	...	.8	1.4
Total 6 months ...	10.1	2.4	4.0	3.7	3.1	4.4	3.1	3.8	15.3	2.6	2.7	4.2	3.2	4.4	4.9
Total 12 months ...	39.3	19.9	18.2	46.2	26.4	18.8	36.1	14.6	37.5	3.7	14.9	23.9	23.8	15.1	26.1

Our months do not agree with the seasons understood by the people. The monsoon or rainy season generally begins in the last ten days of June, i.e. the first fifteen days of the native month of "Hār": and lasts during July, August and September (Hār, Sāwan, Bhādon.) The advent of the monsoon is heralded by several days of boisterous weather, the wind blowing steadily from the south-east. The land has been parched by more than three months of a blazing tropical sun till there is scarcely a vestige of vegetation left; but with the first fall nature springs into life, and in a few days the face of the country is covered with verdure, grass grows abundantly where it is allowed to, and the autumn crops soon show themselves in the cultivated fields. Rain and sunshine succeed each other at short intervals during the next three months, the breaks of fair weather lasting generally only for a few days. The monsoon rains close at the end of September. There is then generally a slight fall about the time of the Diwālī Festival (20th October), fairly heavy rain about Christmas or the New Year, and again at the end of February or beginning of March. The total of the winter ("Sīāl") falls in six months is not equal to that of the single months of July, August, or September, but owing to the lower temperature the effect is much greater on the vegetation.

17. The following is a statement of the temperature during the months of May, July and December, being the average of observations between 1880 and 1882:—

Temperature in the shade in degrees Fahrenheit.

MAY.			JULY.			DECEMBER.		
Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.	Maximum.	Minimum.	Mean.
103	69	86	94	73	86	74	43	58

In April the temperature is at first moderate, but towards the end of the month it rises in the day time. In May and June the sun is very powerful, and the atmosphere hot and dry. The heat is intense, though ~~not~~ worse than in most plain districts, and is not much less during the night than in the day. The first fall of rain brings an immense relief and somewhat cools the air, and for the next three months rain and strong sun succeed each other, the atmosphere being saturated with moisture, at all events in the upper portions of the district. October has hot days and mild nights; and for the five months following it the air is cool and bracing, the nights of December and January being intensely cold. Chill winds from the north often blow for days in January and February, blighting the crops. In the lower part of the district, and more especially in the "jangal" villages, the hot weather begins much earlier and the air is dry all the year round.

18. As might be expected the moist Bét tract is very unhealthy.

Health. During the months August to November fever is very prevalent; and, if the year is bad, one can scarcely in October find an able-bodied man not suffering from it. The villages have during this season the appearance of being deserted; and the same answer is returned in every village to one's inquiries as to where the Lambardárs are, "táp se digiá" (he is down with fever). Ludhiána, and all the towns and villages along the high bank and over the Budha Nála are not better off. In Máchiwárah, Bahlolpur, Kum, Bhundri, &c., it is quite part of a man's life to have an attack of fever once in the year. The severity of these attacks varies, but the general result is a weakening of the constitution, which makes the people less able to resist the effects of other ailments; and it will be found that the dwellers in the Bét and along the high bank are much shorter lived than those of the more inland tracts. In some years the fever is of a bad type, and then it plays havoc with the people. Mr. Davidson, the former Settlement Officer, speaks in paragraph 10 of his report of being frightened away from Kum by the number of dead bodies brought out for burial while he was there in camp. In 1878 there was a terrific mortality amongst the Kashmiris and other half-starved members of the lower classes in the city of Ludhiána and also in the villages. The civil station is by no means a desirable residence during the months of September and October; but one appears to get away from the influence of the malaria by going even a short distance inland. The most healthy portion of the district is the south-west corner about Bassian and the "jangal" villages, where the climate is always dry and the water much purer. The people of these parts are generally exempt even from fever, and enjoy excellent health. I do not think that the district can claim any special diseases as prevailing. Phthisis and mania are, I am told, the most common. Neither Ludhiána nor any one of the other towns has suffered from an epidemic of cholera since that of 1872; and such visitations are rare. I do not think that ophthalmia is so prevalent as Mr. Davidson represents it in his ninth paragraph.

CHAPTER II.—HISTORICAL.

19. There are no signs to indicate that the Ludhiána district

Physical changes. has been the scene of any great physical change. The Satlej appears always to have been confined to its present valley, though within this it has shifted about a good deal. The last change took place about 100 years ago, when the river abandoned its course under the ridge that separates the lowlands from the Dháia, where now the Budha Nála flows; and transferred to this side the whole of the present Bét tract, which was then for the most part uninhabited. The towns of Bahlolpur, Máchiwárah and Ludhiána, and the old villages, such as Kum and Bhundri, which lie on the top of the ridge, were built on the bank of the river. There is nothing to show that the uplands were ever traversed by streams unless, indeed, the sand belts of the Samrála tahsil, to which I have referred in paragraph 9, mark the course of hill torrents, long since dried up. There are no local traditions indicating that such is the case, but this source of information would not go back more than 300 or 400 years. It is clear that such changes as have taken place in the appearance of the country are the work of man and not of nature.

20. Few districts possess greater historical interest than Ludhiána, which must from its situation have been

Importance of the district in history.

at all periods the scene of most important events. Lying as it does on the high road from Central Asia, it would be crossed by each successive wave of conquest or immigration; and, when we come to historical times, we find that some of the most decisive conflicts for empire took place in this neighbourhood. The Panjáb was always an outlying province of Hindustán; and its loss was not fatal; but, once across the Satlej, an invader had nothing between him and Delhi. Perhaps the greatest interest attaches to the country as the scene of the struggles between rising Sikhism and the Mahomedans; and when at the beginning of the present century the English power extended northwards till finally we succeeded to the empire of India, the Satlej was fixed as the limit of our territories; and Ludhiána was for nearly half a century our frontier garrison at the point where we were in contact with the only remaining independent power, that of the Panjáb.

21. Little can be said of the Hindu period, for there is an absolute

Early history: Hindu period.

dearth of materials on which to found anything resembling history. Mr. Tolbert writes: "I presume that it formed a portion of the kingdom of Magadha. Sunet, Tihára, Máchiwárah and Bahlolpur date from the Hindu period. It is said that Máchiwárah is mentioned in the Mahábhárat, and that Bahlolpur formerly bore the name of Muha-batpura." But, as he points out elsewhere, there are many Máchiwárahs.

It is possible that antiquarian research may give us some information, but at present it has been applied only to the mound at Sunet, a village three or four miles west

Sunet.

of Ludhiána. This mound is of very considerable extent, and clearly marks the site of an important city. It was visited by General Cunningham in 1878-79, and the result of his inquiries will be found at pages 65-67, Vol. XIV of the Archaeological Survey. General Cunningham examined bricks, one or two sculptures and a number of coins; and I will quote his conclusions from an examination of the last: "From these coins the following facts may be deduced with almost absolute certainty:—

"(1.)—The town of Sunet was in existence before the Christian era as evidenced by the coins of Uttamadatta and Amoghabhuti. It continued to flourish during the whole period of the dominion of the Indo-Scythians, and of their successors who used Sassanian types down to the time of Samanta Dewa, the Brahmin King of Kabul and the Panjáb.

"(2.)—From the total absence of coins of the Tomará Rájās of Delhi, as well as of all the different Mahomedan dynasties, it would appear that Sunet must have been destroyed during one of the invasions of Mahmud of Ghazni, and afterwards remained unoccupied for many centuries."

There are various legends about the destruction of Sunet, all of which represent the last Rája as living on human flesh and as owing his downfall to not having spared the only child of Brahmin widow. Mr. Tolbort appears to think that the town was overthrown by an earthquake. However this may be, it is likely that Sunet was the head-quarters of some Hindu kingdom, small or great; but more we cannot tell.

Current tradition identifies Tihára in the north-west corner of

Tihára &c.

Jagrón tahsil with the city of Varát mentioned in the Mahábhárat; and this is said

to have been its name up to Mahomedan times. It was a place of some importance under the Mughals; but the old town has long since disappeared into the river which ran under it; and the present site is at some distance from the former one. Tihára may have been the capital of a small Hindu kingdom. There was also a city called Mohabatpur close to Bahlolpur; but of this, too, all traces have disappeared.

It is quite possible that in Hindu times the country was to some extent inhabited by a nomad people, and that there were a good many towns and villages along the banks of the river; but they and the races that dwelt in them have long since disappeared, perhaps in the time of the early Mahomedan invasions when the country was overrun by plundering Biluchis and other tribes. The ancestors of the present agricultural population certainly immigrated within the last 700 or 800 years. The Rájputs were the first settlers, and came from the south. They say that in the reign of Shaháb-ud-din Ghori (A.D. 1157) their ancestors found the country all waste, and obtained from the Emperor the grant of a large tract of land along the Satlej, in which they settled. Their villages are almost all found along the ridge over the old course of the river, or in the valley beneath. They were followed by the Jats who mostly came from the same direction as the Rájputs, and began to settle in the uplands 400 or 500 years ago, first in the eastern parts, and much later in the west, tahsil Jagrón, &c.

22. There is no information about the district during the earlier

History under the Pathán dynasties: founding of the town of Ludhiána and first settled Government of the country under the Lodis.

Mahomedan invasions; and it is not till the time of the Lodis that the name is mentioned. The local history of Bute Sháh, which is, I believe, generally very reliable, gives the following account of the first attempt to establish a

settled government in these parts:—In the reign of Secunder, son of Bahlol Lodi, the people about Ludhiána were oppressed by the plundering Biluchis, and applied to the Emperor for assistance. Secunder, in answer to their prayer, sent two of his Lodi chiefs, by name Yusaf Khán and Nihang Khán, with an army. These chiefs fixed on the present site of the Ludhiána city, which was then a village called Mír Hota, as their head-quarters, and restored order in the country about. Yusaf crossed the Satlej to check the Khokhars who were then plundering the Jalandhar Doáb, and settled at Sultánpur. Nihang Khán remained at Mir Hota as the Emperor's lieutenant; and called the place Ludhiána. He was succeeded by his son and grandson. The latter, Jelál Khán, built the fort of Ludhiána out of the bricks found at Sunet. His two sons partitioned the country round about Ludhiána, which was then lying waste, amongst the people of the town, and distributed them in villages. In the time of Jelál Khán's grandsons, Alu Khán and Khizr Khán, the Lodi dynasty was overthrown by Baber; and the Lodis of Ludhiána sunk to the position of ordinary subjects of the Mughal empire. They are said to have lived close to the fort for many generations, but all traces of them have now disappeared, and even the tombs of Nihang and his immediate descendants have been lost sight of, although they are said to have been standing some years ago. Without vouching for the accuracy of this account, I should say that the founding of the city of Ludhiána, and the first systematic attempt to people the country about it, date from the reign of the Lodi dynasty, who held the throne of Delhi from 1450 to 1525. Under Bahlol Lodi's "beneficent administration the prosperity of the country reached its summit, and the limits of the empire were extended to the Indus"—(*Marshman*); and the reign of his successor, Secunder, was a most prosperous one.

23. The progress of the country does not appear to have been

Under the Mughal Empire.

impeded by the change of rulers; and the Mughals established a strong Government at Sirhind, to which Ludhiána and the country

about it were attached as a mahál or parganah. Sirhind, with the rest of the empire, passed into the hands of the Sur dynasty; and it was at the town of Máchiwárah, 25 miles east of Ludhiána, that Humayun fought the battle with Secunder Sur, which restored him to the throne of Delhi in 1555. It is to the reign

Akbar.

of Akbar (1556-1605) that most of the people

in the eastern part of the district ascribe the advent of their ancestors and the founding of their villages; and it is most probable that before the commencement of the 16th century there were only a few villages scattered over the district (mostly Rájput), and that the great im-

migration of Jats, who occupy the whole of the uplands, began under the settled rule of the Lodis and continued during the whole of the 16th century. The Ain Akbari enumerates the following maháls (or parganahs as we should call them):—Tihára, Haṭur, Bhundri, Ludhiána, Máchiwárah and also Pael and Duráha. The first three are still considerable villages in Jagráon tahsíl. The town of Pael and the village of Duráha are situated in Patiála territory between Ludhiána and Samrála; and it is clear that these seven maháls, which were in the Sirhind division or “Sarkár” of the Delhi Province or “Subah,” covered most of the present Ludhiána district and the adjoining parts of Patiála territory.

24. During the century and a half which followed the death of

Rise of the Sikhs and decline of the Empire.

Akbar historical interest centres for this part of the country in the rise of Sikhism as a power, and the constant struggles between the

followers of the Gurus at first and latterly the Phulkian and other Sikh chiefs on the one hand, and the local representatives of the empire on the other. The life of Nának was contemporary with the reign of the Lodi dynasty: and Hargovind, the sixth Guru, was engaged during the latter years of Jehangir's reign in petty warfare with the imperial troops. Aurangzeb ascended the throne in 1657, and the ninth Guru, Tegh Bahádar, was murdered by his orders at Delhi in 1675. Govind Singh, the last of the Gurus, succeeded Tegh Bahádar; and under him commenced the long struggle between the Cis-Satlej Sikhs and the Mahomedan Governors of Sirhind, which was only a part of Aurangzeb's persecution of the rising sect. This district, with the adjoining country to the south, was the scene of many of the great Guru's wanderings and encounters with his enemies; and it was in Sirhind that his wife and children were murdered about the year 1700—a deed that has made the place for ever accursed to all true Sikhs. It is probably to the bigotry and persecution of Aurangzeb (whose memory the Sikhs to this day hold in such detestation that they never refer to him otherwise than as “Ranga”) that we should ascribe the union of the followers of the Gurus into a militant power with one common object. Aurangzeb died in 1707 and Govind Singh in 1708. The latter was succeeded as leader of the Sikhs by Banda, under whom their arms were at first attended with success, the imperial troops being defeated and Sirhind sacked in 1709. But, although they twice overran the country between the Satlej and the Jamna, they were finally dispersed, and Banda taken and executed in 1716. For a generation after this event the Sikhs were much depressed and persecuted; and it was only when all energy had departed from the empire that they were able to raise their heads again. From this time the struggle was continued by the Phulkian and other chiefs, who saw their way to establishing kingdoms for themselves on the ruins of the empire, now tottering to its fall. Ala Singh, the founder of the Patiála house, succeeded his father Rāma in 1714; and was a contemporary of Rai Kalha (II) of Raikot, under whom the Rais of Raikot, who had hitherto held the lease of a considerable tract of land from the emperors (see history of the

family in Chapter III), first asserted their independence. The district as now constituted cannot be said to have a separate history of its own during these times; and it would be impossible for me to detail here in full the conflicts between the various claimants for the territory which now makes it up. The principal actors in this scene were the Rai, Rāja Ala Singh of Patiala and the representative of the Delhi Empire at Sirhind. In 1741 we find a combination of the two last against Rai Kalha, who had been endeavouring to throw off the Imperial authority. Rai Kalha was defeated and chased out of the country; but he soon recovered the territory which he had hitherto held as a fief of Delhi. The alliance between the Sikhs and the imperial troops lasted for a very short time; and the Rai was able to extend his territories unopposed, there being plenty of room for him to do so at the expense of the empire without danger of interfering with schemes of the Sikh chiefs. In a foot-note to page 60 of the "Panjāb Rājas" is given a short sketch of the history of the Rais, and it is said that they got possession of the town of Ludhiāna in 1620; but this is evidently a mistake. The town and fort of Ludhiānā did not fall into the hands of the Rais till about the year 1760 A.D.

25. The invading army of Nādir Shāh Durāni crossed the Satlej at

Durāni invasions: to the taking of Sirhind by the Sikhs (1738-1763.)

Ludhiāna, which was then on its banks, and marched through the district along the Imperial highway connecting Lahore and Delhi, the course of which corresponds with that of

the present Grand Trunk Road and Railway. Nādir Shāh is said to have ordered a general massacre of the inhabitants of Ludhiāna on account of some petty fault; but it appears doubtful if he did. Ahmad Shāh entered India on his first expedition in 1747. On reaching the Satlej at Ludhiāna, he found his passage opposed by the son of the emperor and the Vazir, Kamardin, with a large army which had advanced from Sirhind. Ahmad Shāh, adopting the usual Durāni tactics, made a long night march up the right bank of the river; and, crossing about Māchiwārah or Bahlolpur, endeavoured to throw himself between the Vazir and Sirhind. The two armies came face to face on a sandy plain between the villages of Mānupur, Barwālī, &c., a few miles to the north-east of Khannah, in the Samrāla tahsīl. The Imperial troops took up a strong position from which the Durāni could not dislodge them. Desultory fighting went on for many days, and in one of the skirmishes Kamardin was killed. His son, the distinguished Mīr Maunu, was equal to the occasion; and, seating the body of his father on an elephant, paraded it before the troops. Ahmad Shāh had finally to retire discomfited. It is said by the villagers about that the loss on both sides was very heavy; and that for a long time the stench of the dead bodies made the cultivation of the fields impossible. To the subsequent invasions of Ahmad Shāh no resistance was attempted by the Imperial troops in Sirhind; but his armies were constantly harassed by the Phulkian chiefs and the Rais. It was some time about 1760 that the Rais were permitted by him to take possession of the town and fort of Ludhiāna and to extend their power over the country about. In 1761 Zain Khān was appointed by Ahmad Shāh Governor of Sirhind. In the following year there was

a formidable combination against Zain Khán of all the Phulkian and other Sikh Cis-Satlej chiefs, assisted by numerous bands of Sikhs from the Mánjha. Ahmad Sháh heard of this at Lahore; and, marching to the Satlej in two days, he crossed at Ludhiána and fell upon the allies a short distance to the south of it* just as they were attacking Zain Khán. The Sikh army was cut to pieces, and the fugitives pursued to a great distance. This disaster (called the "Ghalu Ghára," or great massacre) does not appear to have had much effect on the Sikhs, for in the following year (1763) they were able to bring together a large army composed of the Cis-Satlej Sikhs, aided by bodies of their co-religionists from across the Satlej. Zain Khán was defeated and slain; and the Sikhs, following up their victory, took possession of Sirhind which they levelled with the ground.

26. With the fall of Sirhind vanished the last vestige of Imperial control over that portion of the empire of which it was the head-quarters; and when in the next year Ahmad Sháh passed through the country he recognized this by appointing Rája Ala Singh of Patiála to be Governor. In 1767 Ahmad Sháh reached Ludhiána on his last expedition into India; but got no further. He confirmed Amar Singh, the grand-son of Ala Singh, in the Government of Sirhind, and gave him the title of Máharája; and from this time the Sikhs and other chiefs who had taken possession of the country were left alone to settle their own affairs. The Imperial authority had to the last been maintained over most of the country lying between Ludhiána and Ambála, and round the head-quarters of the Sarkár or division. On the fall of Sirhind the whole of this rich tract fell into the hands of the Phulkians and their Mánjha allies. The present Samrála tahsíl and a small portion of the east of Ludhiána were partitioned between the latter, each chief and confederacy seizing as many villages as they could. The eastern boundary of the territory of the Rais had in the few years preceding the capture of Sirhind been quietly advanced eastwards from Badowál, Dhándra, &c., so as to include the town of Ludhiána and the whole of the villages in the uplands to the south and east of it to within a few miles of Máchiwárah. Their northern boundary was the river Satlej, which then flowed under the high bank along the present course of the Budha. The low lands opposite them were held to the south of Ludhiána by the Kákar Sardárs and Diwán Mohkam Chand, and to the north by Tara Singh Ghaiba (also a Kákar). There was no Bét on this side. The Maloud Sardárs had already established themselves in the south of Ludhiána tahsíl (the jungle villages and the country about Maloud); and Sudha Singh, Gil, an adventurer from Loháru in the Ferozepur district, secured a few villages about Sahnéwál. With these two exceptions the whole of the present uplands of the Jagráon and Ludhiáná tahsíls belonged to the Rais; and they had also a considerable part of the Moga and Zira tahsíls of Ferozepur, in all 1,360 villages, it is said. The Samrála tahsíl was divided as follows: Sudha

* The battle took place at Barnála in Patiála territory, 40 miles south-west of Ludhiána.

Singh, Bájwa, seized Máchiwárah and the eastern portions of the Utálan parganah; and the western half fell into the hands of the Ladhraan Sardárs. In parganah Khanuah some villages were held by a servant of Tára Singh Ghaiba, who subsequently set up for himself at Khannah; and the rest was divided between the Khéri, Bhari, Ajner, Jabu mazra, Sardárs and members of the Sontiwála and Nishánwálá confederacies. Jassa Singh, Ahluwála, got 30 or 40 villages round Isru. Under the Rais the Garewáls of Raipur and Gujarwál had some sort of local authority in the villages about; but they were only "malguzárs" or contractors for the revenue.*

Twelve years after the fall of Sirhind, about the year 1785 A.D., occurred the change in the course of the Satlej, to which reference has already been made; and the whole of what is now the Bét of the district came to this side, a tract upwards of 50 miles in length and five or six in width. It was at the time in the possession of the Kákars, Tára Singh Ghaiba, whose head-quarters were at Rahon, having the upper part, and his brethren, the lower portion, what is now the Nurpur parganah; and these chiefs retained their hold in it, except where Sudha Singh of Sahnéwál seized some uninhabited portions in front of his upland villages, about Matewárah. There was then very little cultivation in the tract, the villages being few and far between. Most of the present ones owe their foundation to these chiefs, and date it from within the last 100 years.

The Rais had a number of forts at different places, and each Sikh chief erected one or two according to the size of his possessions. This partition of the country appears to have been recognized by the various parties to it; and during the last forty years of the 18th century they do not seem to have attempted any encroachment on each other's territories, but to have gone on very amicably.

27. The condition of the country during the latter part of the 18th century was one of considerable prosperity. The rule of the Rais is still spoken of as being very mild; and it is said that they fixed only one-fourth of the produce as their due. The peasantry were probably very glad to have the struggle, which had been going on for so long, finally ended; and the minor chiefs appear to have done their best to encourage the spread of cultivation. They took a full revenue in kind, and exercised a good deal of petty tyranny; but one does not hear much of exactions in the early years of their rule; and they had scarcely time to engage in quarrels amongst themselves before the arrival of Ranjit Singh. The Dháia villages mostly date their founding from a much earlier period; but the Bét tract at the time of its transfer to this side of the river was mostly waste; and the greater part of the present small villages owe their origin to the Kákar and Ghaiba chiefs. One hears of few instances in which the proprietary body were at this time driven to desert their lands by the oppression of the rulers. In

* These Garewáls were Jats who obtained the lease of a number of villages under the later empire, and maintained their position till the invasion of Ranjit Singh in 1806 A. D. (also see para 50).

fact the condition of the people was very much better at this time than it was subsequently under the followers of Ranjit Singh.

28. The peace which the country enjoyed after the fall of Sirhind was interrupted by the appearance on the scene of Bedi Sáhíib Singh of Una. This fanatic crossed the Satlej in 1794 A.D., with an army of Sikhs from the Jalandhar Doáb, proclaiming a religious war against the Patháns of Maler Kotla. He was turned aside from Maler Kotla by the Patiála chief; but in 1798 again crossed and made a similar attack on the Rais of Raikot. Rai Aliás was a minor: but his agent Roshan, Gujar, made a good stand against the Sikhs at Jodh, ten miles south-west of Ludhiána. Roshan was killed in the fight, and the Rais army dispersed; but the Phulkian chiefs, who had always been on good terms with their Mahomedan neighbours of Kotla and Raikot, and who had no intention of allowing the Bedi to establish himself in their midst, now came to the assistance of the Rai, and drove the invaders out of most of the villages seized by them. The Bedi thereon invested the fort of Ludhiána; and the Rai called in the adventurer George Thomas from Hansi. On Thomas' approach the Bedi retired across the river, and ceased to trouble the country.

29. The capture of Delhi in 1803 brought the English into direct contact with the Cis-Satlej chiefs from the south, and about the same time Maharája Ranjit Singh, having extended his dominions to the north bank of the Satlej, began to think of conquest beyond it. The disputes between the states of Patiála, Nábha, and Jhínd afforded him the desired opportunity, and in July 1806 he crossed the Satlej with an army. The last of the Rais (Aliás) had been killed while hunting in 1802; and the family was represented by his widow, Bhág Bhari, and his mother, Nurul Nisa. No opposition was offered to Ranjit Singh, who took possession of the town and fort of Ludhiána, and made them over with the villages about to his nephew, Rája Bhág Singh of Jhínd. He proceeded to Patiála on pretence of settling the disputes, and returned to the Panjáb *via* Amballa and Thanesar. In the following year (1807) he was again called in aid, crossing at the Hariki Ford (Sabráon), he proceeded to Patiála, and thence marched into the Amballa district, where he besieged and took Naraingarh. During these two expeditions Ranjit Singh, besides stripping the Rais of all their territory save two or three villages given for maintenance, also annexed the possessions on this side of the river of Sudha Singh (Sáhnewál) which were held by his widow, Ráni Lachmi; as well as of Tara Singh Ghaiba, also held by a widow, together with the Kákar villages. The spoliation of the Ghaiba family was perhaps the most shameless of all these transactions, as Tara Singh died in this very year while accompanying the Maharája on his expedition. These conquests were divided by the Maharája between himself and his adherents. Rája Bhag Singh of Jhínd got about 100 villages round Ludhiána and in the Bassian ilaqa; Sardár Fattah Singh, Ahluwália, (ancestor of the present Kapurthala chief) nearly the whole of the Jagráon tahsil and the Dákha parganah;

Sardár Gurdit Singh of Ládwa, a number of villages about Badowál; Bhái Lál Singh of Kaithal, 16 villages about Gujarwál; the Nábha chief, some villages in Pakhowál, while the men of less note, such as the Sodhis of Nandpur, got jagirs. Diwan Mohkam Chand was put in charge of the country reserved by Ranjit Singh for himself.

30. By this time the British Government had made up its mind that the further aggressions of Ranjit Singh on this side of the Satlej should be stopped, and the chiefs taken under our protection. Mr. Metcalfe was despatched as agent to conclude a treaty with Ranjit Singh, and joined his camp at Kasur in September 1808. Immediately after this Ranjit Singh crossed the Satlej on his third invasion and attacked Faridkot and Maler Kotla, notwithstanding the remonstrances of our envoy. After accomplishing his objects the Maharája returned to Amritsar, and there Mr. Metcalfe communicated to him the decision at which the Government had arrived—that all conquests made in his first two expeditions might be retained, but that for the future the country between the Satlej and Jamna was to be considered under our protection, and all territory seized during the last expedition restored. To support this demand a force under Colonel Ochterlony was moved towards the frontier, and on February 18th 1809 the troops reached Ludhiána, and took up a position there, which was destined to be permanent. It is matter of history how Ranjit Singh finally yielded to all our demands and entered into the treaty of 25th April 1809, by which he and his dependants were allowed to retain all territory on this side of the Satlej acquired in the expeditions of 1806 and 1807. The occupation of Ludhiána as a military outpost was intended to be temporary only; but the troops were never withdrawn. We had by the treaty taken under our protection all the Cis-Satlej chiefs, except those who had been brought into the country by Ranjit Singh; and the management of our concerns with them required the presence of a Political Agent and a force at this point.

31. General Ochterlony held political charge at Ludhiána from 1809 to 1815, and was succeeded by Captain Murray, after whom came Sir Claude Wade (1823-38). Sir D. Ochterlony and Sir C. Wade had the full powers of agents, but otherwise the post was held by an assistant. It was General Ochterlony who gave the fort its present form, Ranjit Singh setting up that of Philour to face it after the conclusion of the treaty of 1809. In 1835 Rája Sangat Singh of Jhind died, and with him the direct line of the house failed. The escheat of the whole Jhind territory, or at least of all bestowed on Rája Bhág Singh by Ranjit Singh, was claimed by the latter; but it was finally decided that Sarup Singh, a collateral of the late Rája, should succeed to the ancient possessions of the family, those held by Rája Gajpat Singh, and that all subsequent acquisitions should escheat to the British Government unless they had been granted by the Maharája after the treaty of 1809, ("Panjab Rájas" p. 34, *et seq.*). By this decision we acquired upwards of 80 villages round Ludhiána and in the neighbourhood of Bassian with a revenue of about Rs. 1,00,000, and

these formed the nucleus of the present district, the administration being carried on for the next ten years by the Assistant Political Agents at Ludhiána, a list of whom will be found at p. 306 of the Panjáb Rájas, and also in para. 35 of the former report by Mr. Davidson.

32. Ranjit Singh died in 1839, and his death was followed by six years of disorder in the Panjáb. It would be out of place here to give a detailed account of the circumstances which led to the outbreak of the first Sikh war; but a short notice of our position of Cis-Satléj is necessary, as the neighbourhood of Ludhiána was the scene of part of the struggle between us and the Khalsa army, and our hold on the place was of the first importance throughout. Up to 1838 Ludhiána was our only outpost on the Lahore frontier, but in that year a large force was assembled at Ferozepur for the invasion of Afghánistán, and the latter place somewhat threw Ludhiána into the shade, being within easier reach of the capital of the Panjáb. Ferozepur and the territory round it had lapsed to us on the death of Ráni Lachman Kour in 1835, in much the same manner as the Ludhiána territory had. It was about the year 1838 that Sir George Clerk, the Governor-General's Agent at Amballa, built the large circuit house still standing at Bassian, a position from which communications could readily be maintained with both places and control exercised over the Phulkian chiefs. On the withdrawal of the army from Afghánistán in 1842 our position in the Cis-Satléj territory west of Amballa was this: We had two patches of territory on the Satléj in the neighbourhood of the garrisons of Ludhiána and Ferozepur, which were completely isolated, and surrounded by the possessions of the Lahore Darbar and its feudatories. I have endeavoured to show on map No. IV accompanying this report the division of the country at the time between the various States and petty chiefs.

33. In December 1845 the Khalsa army crossed the Satléj, and the first Sikh war commenced. The chief interest centres round Ferozepur, which was the main point of the Sikh attack; and there the bulk of our force collected, the troops for the most part marching direct *via* Bassian, and Ludhiána was left with a mere garrison. But the position was not one likely to be neglected, as it covered the communications in the rear of our army; and its importance was probably appreciated by the Sikhs, for in January 1846 their general, Ranjodh Singh Majithia, created a diversion by appearing with an army at Philour and crossing the Satléj. His force consisted of 10,000 infantry with 60 guns and some cavalry. His presence on this side of the Satléj was fraught with the greatest danger to us; as in a struggle with the Lahore Sikhs we could at most expect little better than neutrality from their co-religionists on this side. The position of such chiefs as had territories on both sides of the Satléj scarcely left them a choice. Nihál Singh, Ahluwalia, tried to play a double game. His troops fought against us about Ferozepur and a considerable body of

them joined Ranjodh Singh near Ludhiána, while their master was professing friendship to us, and saying that he had no power over them. The Ládwa chief, whose head-quarters were at Badowál, and who had everything to lose by such conduct, openly went over to Ranjodh Singh while he was still on the Jalandhar side of the river. Such was the weakness of the Ludhiána garrison that he was able before crossing to burn a portion of the cantonments with impunity; neither was any attempt made to bar the passage of Ranjodh Singh's army; which had our communications at its mercy. Such a state of affairs was not likely to last long; and Sir Harry Smith was soon despatched from Ferozepur with a force of about 4,000 men to keep open the road between that place and Ludhiána. On January 20th he reached

Jagrón, while Ranjodh Singh occupied Badowál
between the British force and its destination.

Sir Harry Smith's object was to effect a junction with the Ludhiána garrison without coming into collision with the enemy, and he accordingly attempted to pass to the south of their position. But his flank was attacked by the Sikhs with great violence near Badowál; and our troops, wearied with a long march, were for some time in considerable danger. They were extricated from the position with a loss of 200 men and nearly the whole of the baggage, and brought into Ludhiána. The result of this action of January 21st was most damaging to our prestige; but the effects had scarcely time to be felt before they were effaced by the complete success of our arms. On the 22nd January, Ranjodh Singh moved to the village of Bhundri on the Satlej, where he was joined by some regular troops of the Lahore army, his strength being then raised to 15,000; and here he remained quietly for a week, having, as he hoped, a clear line of retreat, and commanding the road along the Satlej between Ferozepur and Ludhiána. General Smith was also reinforced, and on the 27th January marched towards the position of the Sikhs. He found them posted in the low

lands close to the Satlej with their right
resting on the village of Bhundri, which is on

the high bank, and their left on Aliwál, close to the river. East of Bhundri the high bank or ridge, which separates the valley of the Satlej from the uplands, sweeps inwards in a semicircle to the distance of five or six miles, crowned with villages at intervals, and leaving a wide open plain between it and the river. It was across this plain that the British army on the morning of January 28th moved to the attack, the capture of the villages of Aliwál, the key of the position, being their first object. The Sikh guns were as usual well served; but Aliwál was in the hands of inferior troops, and the resistance was spiritless. By the capture of Aliwál the Sikh left was turned; but round the village of Bhundri their right, composed of trained and enthusiastic Khálsa troops (Avitabile's Regiments), made a most determined stand, and the whole battle is still called by natives "the fight of Bhundri." The most gallant part of the action was the charge by the 16th Lancers of the unbroken Sikh infantry, who received them in squares. Three times the Sikhs were ridden over, but they reformed at once on each occasion; and it was not till the whole strength of our

army was brought to bear on them that they were at length compelled to turn their backs. The Sikh troops were either driven across the river, in which many of them were drowned, or dispersed themselves over the uplands. Our loss was considerable, 400 men killed and wounded; and a tall monument, erected in the centre of the plain to the memory of those who fell, marks the scene of the action.

34. The battle of Aliwál cleared the upper Satlej of our enemies, rendered our communication sure, and enabled Sir Harry Smith to join the army of the lower Satlej with his victorious force. On the 11th of February the crowning victory of Sabraón was won, and the first Sikh war ended. The abrogation of the treaty of 1809, and the annexation of all Lahore territory on this side of the river were the natural results of our success; and it remained to settle accounts with the Cis-Satlej chiefs, who had either been in active opposition to us, or had withheld their assistance when it was most needed. The Ládwa chief forfeited all his possession, and the Ahluwália chief all on this side, while the Nábla Rája lost one-quarter of his territory (for a detailed account of these transactions see the "Rájas"). Such of the minor chiefs as had not openly joined the enemy were maintained in their possessions; but these were included in our territory as jagirs, independent power being given only to the Phulkian Rájas and the Maler Kotla Nawábs. Where the chief had gone against us, his villages were absolutely annexed. From these acquisitions was formed in 1847 the present Ludhiána district after a trial of Badni as headquarters for a short period. Trifling changes have since occurred; but the map to which I referred in paragraph 32 will show whence the various parts of the district, as it is now constituted, were acquired. For a full account of the treatment of the petty chiefs whose territories were not annexed I would refer to pages 186-200 of the "Panjáb Rájas." The police powers and the right to levy transit duties were taken away from them at once; and, when the whole Panjáb became ours in 1849, they lost all civil, criminal and fiscal jurisdiction, a cash demand being at the same time substituted for their right to an undefined share of the produce, and they were thenceforth "considered as no more than ordinary subjects of the British Government, in possession of certain exceptional privileges." A cash commutation was also fixed in place of the levies which they were bound to furnish for the service of the paramount power.

35. To the work of conquest succeeded that of settling the administration of our new possessions. In passing I would mention the calamity which occurred to the 50th British Regiment shortly after its return to cantonments. It had suffered severely in the battles about Ferozepur and by sickness during the campaign, and was enjoying a well earned rest, when in a dust storm one of the principal barrack buildings fell, crushing to death 210 men, women and children. When in 1849 we annexed the Panjáb, Ludhiána ceased to be of any importance as a military

History from 1846 to 1857.

station. The cantonments were finally abandoned in 1854, and since that time the only troops permanently posted have been a portion of some native regiment as a garrison for the fort. During the ten years succeeding the Satlej campaign Ludhiána is to be pronounced happy as having no annals. The work of administration progressed steadily, and the resources of the country developed rapidly under the security given by our rule. A summary assessment in 1846-47 of the new acquisitions, was followed in 1849-53 by a Regular Settlement of the whole district, the success of which it will be for me to show in another part of this report. Cultivation increased, and trade began to flourish in consequence of the removal of the transit duties, the improvement of communications, and the security to life and property which resulted from our government.

36. Although Ludhiána had ceased to be a cantonment at

The Mutiny (1857). the time of the outbreak of the Mutiny, it lay on the route to Delhi of the Panjáb mutineers, and also of the succours sent by Sir J. Lawrence; and there were busy and anxious times for the Deputy Commissioner, Mr. G. H. Ricketts, and his assistant, Mr. Thornton. The former of these has left an account of the measures adopted in anticipation of the arrival of mutineers or of a local rising, and has detailed the course of events during the early months of the mutiny. The fort was garrisoned by a detachment of the 3rd Native Infantry from Philour; and this regiment also supplied the guards at the treasury, jail, &c. It was known to be disaffected; and Mr. Ricketts had called for and obtained assistance from the Nabha and Maler Kotla States and from the principal jagirdars of the district, the latter of whom responded to the call with the greatest alacrity, and supplied horsemen and foot, who were employed on patrolling the roads, furnishing guards, &c. Nabha and Maler Kotla sent some troops and a couple of guns; and there was a small body of Rothney's Sikhs with two English officers. The whole of the money in the Treasury had been removed to Philour, which was held by a detachment of an English regiment, the 8th*; and when on the 9th of June 1857 Mr. Thornton crossed the river on some business connected with it, he heard of the Jalandhar outbreak. He hurried back, taking the precaution to cut the bridge of boats behind him. News of the outbreak also reached the Ludhiána detachment of the 3rd Regiment, who at once mutinied and seized the fort. The Jalandhar mutineers, finding their passage at Philour impossible, went three or four miles up the river and crossed. On hearing of this Mr. Ricketts with two or three companies of the Sikhs under Lieutenant Williams, and the Maler Kotla and Nabha levies and two guns marched to oppose them. He found that they had just crossed in a large body and were on this bank near the village of Chuharwála. Although it was night an attack was at once made; but the levies appear to have bolted at the first shot, and Lieutenant Williams was wounded and several other casualties occurred, so that the

* The Fort at Philour was at first held by the 3rd N. I., but they were replaced by English troops shortly before this.

little force had to retire before superior numbers, which they did without molestation. Mr. Ricketts and his men took up a position to the west of the city in the present kachery, I believe; and the mutineers next morning passed through the eastern part of the town. They were joined by their comrades from the fort; and, after plundering the Mission lines and opening the jail, went down the Maler Kotla road in great haste, dreading the arrival of a pursuing force from Jalandhar. The rabble of the town, composed of Kashmiris and others, had risen and done some plundering, but the mutineers only remained for a few hours; and immediately on their departure order was restored and some of the rioters were executed. The Mahomedan Gujars of the Bét are the only people of the district who appear to have shown any disaffection, but it is in the nature of this tribe to be discontented. The Hindu Jats, who form the mass of the population, could have nothing in common with the mutineers, and were steadfastly loyal to us. Not a single instance of disturbance in any part of the district save in the town of Ludhiána is recorded.

37. The only event left to chronicle is the "mad attempt" by the Kukas in 1872. An account of the rise of this sect will be found in the next chapter.

The Kuka outbreak.

The proceedings of Rám Singh's followers had caused anxiety to Government for many years, and special precautions were from time to time taken to prevent large gatherings of them. Small disturbances occurred at the religious fairs here and there; and in 1870 "butcher" murders were committed in one or two places, the rage of the Kukas being directed against the killers of kine. On the 13th January 1872 there was a meeting of Kukas at Bhaini, and a gang of about 150 of these, after working themselves up into a state of religious frenzy, started off under the leadership of two Jats of Sakroudi in Patiála territory. Rám Singh informed the police of their intention to do some mischief, saying that he had no control over them; but it was considered sufficient to see them out of our territory. They were armed with axes, sticks &c. only; and are said to have declared that the town of Maler Kotla would be the object of their attack. They went to Pael in Patiála territory without causing any disturbance, and re-appeared next day near to Maloud, the seat of Sardár Badan Singh, on which they made a sudden onset with the idea, probably, of getting arms and money. They are said to have wanted the Sardár to lead them. In this attack two men were killed on each side and a few wounded, and the gang succeeded in securing three horses, one gun and one sword. No one joined them anywhere on their march, and they never numbered more than 150 men at the outside. They next proceeded to Kotla, which is nine miles distant from Maloud; and on the morning of the 15th made a sudden attack on the palace and treasury of the Nawáb; but were driven off when the Kotla guards had recovered from their surprise, and pursued to Rarr in the Patiála territory, where to the number of 68 they surrendered to the Patiála authorities. At Maloud and Kotla they had killed 10 men and wounded 17, while their own loss had been 9 killed and 38 wounded. On getting news

of the attacks on Maloud and Kotla Mr. Cowan, the Deputy Commissioner of Ludhiána, started for the latter place, and telegraphed for troops, which arrived soon after. Mr. Cowan executed by blowing from guns at Kotla 49 of the captured men, and the others were tried by the Commissioner (Mr. Forsyth).^{*} Thus ended the Kuka outbreak of 1872. If the Kukas ever had any plans for a rising they must have been completely upset by these insane proceedings of a small body of fanatics, rushing about the country armed with sticks and axes. The people of the villages through which they passed appear to have been scared by them, and the inhabitants of Rarr, where they were captured, deserted their houses in a body on the approach of the band. Of course Rám Singh and his doctrines were responsible for what happened; and he had become a danger to the State, as similar disturbances might be created at any time by his followers. Rám Singh was at once deported, and has remained a State prisoner ever since.

38. The district has few monuments of antiquity. Such places of interest as there are in the towns will be referred to in the separate accounts given of the municipalities. In paragraph 21 I have detailed what information is available about the mound of Sunet. There are also mounds at several other places; but they generally mark the site of a parent village from which those about have taken their origin. Thus between Gujarwál and Phallewal the mound of Naiebad was the first settlement of the Garewáls. As monuments of the Mughal empire, we have at a distance of two *kos* along the old Bádsháhi Road *minárs* marking the distances; and a fine serai at every sixth or seventh *kos*. The *minárs* are of masonry, and about 12 feet high. They are in a good state of preservation, but have no inscriptions. They are said to have been built in the reign of Sháh Jehán. The serai at Ludhiána has long since disappeared, that at Douráha is in Patiála territory, while that of Lashkari Khán, about seven miles on this side of Khannah, is a magnificent building in very good preservation. The inscription tells us that it was built by Lashkar Khán in the reign of Aurangzeb. It is now seldom used by travellers since the Railway was opened. The serai at Khannah is now part of the town; but the walls are entire. There was a large "hazíra," or tomb, at Tihára of about the same date, but this was washed away by the river in 1868. The Sikhs erected forts at many places in the district, most of which were demolished in 1845. I have referred to the monument in the field of Aliwál. This has been recently repaired or rebuilt. The cemetery of Ludhiána is crowded with monuments of quaint design, remnants of the days when there was a large body of troops here.

CHAPTER III.—THE PEOPLE.

A.—Statistical.

39. By the Census taken in February 1881 the population of the district is 618,835. Six towns make up a total of 83,052 as follows:—

^{*} This account of the outbreak is taken from the reports of Mr. Cowan.

Ludhiána	...	...	...	44,163
Jagraon	...	...	...	16,873
Raikot	...	...	...	9,219
Máchiwárah	...	...	...	5,967
Khannah	...	...	...	3,988
Bahloipur	...	...	...	2,842

and this leaves 535,783 distributed over 914 villages, giving an average of 581 for each village.

40. The Census figures give us the following results for the three years in which an enumeration took place :—

Year of Census.			1855	1868	1881
Population	...	...	527,722	585,547	618,835

Taking these figures as correct, we find that there has been a steady increase which amounted to 11 per cent. in the first thirteen years, and to half that proportion in the next thirteen, the rate of increase having been the same in the towns as in the rural population. No safe conclusions can of course be drawn from the figures alone without consideration of the circumstances of the district at the various periods, and these I will proceed to notice. When we annexed the country after the Satlej campaign of 1845 we found it very fairly cultivated, for our predecessors, the Sikhs, had done their best to increase their revenues by encouraging agriculture; and all the States and Chiefs were under our own protection or that of Lahore. Petty feuds were uncommon and there was general peace. But the Sikh revenue system was what we should call oppressive; and the rule of some of the chiefs was a mixture of tyranny and rapacity. Property in land was considered a burden, which often under a bad ruler became too heavy to be borne; and society must have been in an unsettled state owing to the frequent changes of rulers. In the same way there was a certain amount of trade; but it was checked by the transit duties levied at short distances by each independent chief, and by the general lawlessness. With our rule came perfect security to the husbandman and to the trader; and an immediate development of the resources of the country by the protection afforded to life and property and the opening out of communications. The increase in cultivation must have been very great in the few years that followed the Summary Settlement of 1847; but there are no details to show what it was. When the survey for the Regular Settlement was made in the years 1850-52, it was found that there was a proportion of 84 acres cultivated in each 100 acres of arable area; and a great part of what remained was brought under the plough within a short time after. Perhaps the best proof of the development of

agriculture is the immense fall in prices between 1850 and 1860. The ruler had before that left the peasant just enough to live on, and had taken most of his dues in kind; while the latter knew that the more he cultivated the more he would have to pay, and he had probably as much land under the plough as he could manage. The effects on the population of the development of resources that followed the introduction of our rule would take some time to show themselves; and would naturally appear between the years 1855 and 1868. There was not room for immigration on a large scale, the whole land being owned by the villages; and there was no tendency for settlers to come from any neighbouring district, for the whole country was in much the same condition. The increase of population was all inside the district. The margin of extension has long ago been filled up, the proportion of cultivable to cultivated being now one in ten; and the prudential check on population has to some extent come into effect. There has been everywhere a sub-division of holdings, and in most parts of the district the scarcity of land has made itself felt. At all events amongst the Jats and Rājputs every man does not now marry as a matter of course, really I believe on account of the immediate expense; and in most families will be found one or two men who have remained single. It is undoubtedly the case that a state of things equivalent to polyandry prevails amongst the Jats, though it is not recognised as an institution; and the result is a distinct check on population. The Sirhind Canal has just been opened, and the productive power of a large part of the district will thereby be increased. The portions affected by it are those in which the population is now least dense; and it will be necessary for the present cultivators to call in others to their aid. But the whole of the land here also belongs to villages, and is mostly cultivated: and it is hard to say what the process of immigration will be, and whence the settlers will come. I doubt if the result will be to relieve the more thickly populated parts of this district of their surplus population. Except for this opening I should be inclined to say that the population of the district had arrived at the stationary stage, and that the rate of increase in the future would be at all events much smaller than in the past.

41. The number of persons per square mile is 450 on total area and

Density: Impossibility of strict classification of the population.

543 on cultivation (1·1 acres of cultivation a head), these averages being worked out on the area as surveyed in 1879-80 and the Census of 1881. But the bare figures give us no information on the point which is of greatest importance, the pressure of population on the land; and we are driven to consider that constantly recurring problem of the classification, with a view to determine what proportion actually depends on agriculture. I have set down the urban population at 83,052; but in the case of each of the towns there is a large area attached and belonging to residents. Thus the area of Raikot is larger than that of any village in the district except one; and it would have, if there were no town, a village population of 4,000 to 5,000. So, too, Ludhiāna and Jagraon have a number of separate village areas ("Taraf") attached to them, the agricultural population

living inside the towns. I calculate that the town population proper does certainly not exceed 60,000. We are then left with a rural population of 558,835; but this does not put us far on our way. Combination of occupations is the rule amongst the non-proprietary population, and the recent Census could scarcely have been expected to give us a classification that could be relied on to show how much of this rural population should be set down as depending on agriculture, and how much on trade and manufacture. Indeed, such an arrangement is not possible with a society so constituted as that we have to deal with here. The whole rural population may be said in a sense to be supported by the land, for each village is for most purposes a separate community. All the implements of agriculture, the materials and furniture of the houses, and most of the ordinary clothing are produced in the village; and only a few articles of luxury, such as brass dishes, wedding clothes, &c., are purchased in the towns. The occupations of the various classes in the village hang together, so that they cannot well be separated. Thus the menial classes (takhán, k hář, chamár) are really the servants of the cultivator, helping him in his work by making and repairing his implements; and receive as their wage a share of the produce. They do little work for outsiders; and they very often combine with their hereditary occupation that of agriculture. Even the shop-keepers, who are not a numerous class in most villages, and occupy a very inferior position, being mostly of the “lún tél béchna” class (sellers of salt and oil), are only assistants to the cultivators, supplying them with salt and such necessaries as they cannot grow or make for themselves. We might say that the whole population, after deducting that properly belonging to the towns and subsisting by manufactures and industries quite separate from agriculture, depends on the soil; and I think that any attempt to determine what proportion of it is supported solely by agriculture must be mere conjecture. The density of the rural population calculated in this manner is 490 per square mile of cultivation, or 1½ acres cultivated per head. This proportion varies greatly, as was to be expected, according to the agriculture of the district. Thus in the rich Samrála Bét, where the soil is very fertile and much of it yields two crops in the year, the proportion is 600; and in the Upper Dháia Circle of the same tahsíl, where 40 per cent. of the cultivation is irrigated, it is 660: while in the sandy Lower Dháia tract, just over the Bét, it is only 467; and in the Jangal Circle of Ludhiána, with a rainfall of 17 inches and no irrigation, it is 318. The following are the details of the three most thickly populated tracts of the district:—

Assessment Circle.	Persons per square mile cultivated.
Bét Samrála	600
Upper Dháia Samrála	660
Pawádh Ludhiána	630

These proportions are as high as in most of the highly cultivated tracts of the province, although they are much below those of some parts of Hoshiárpur and Jalandhar. There can be no doubt that in places there is to some extent a pressure of population, especially in the tracts named and in the eastern parts of Ludhiána tahsíl, Bét and uplands. This is not universal, but shows itself in the older and larger villages, where the process of subdivision of land has been going on longest. It is just in these very tracts where the cultivation is most elaborate, that the people are most tied down to their villages. Very few men of the Saurála tahsíl will be found in service. From his birth the agriculturist is bound to the land, which requires his every hour; and the last thing he thinks of is seeking employment of any other sort. There is no emigration to speak of, and the direction in which the excess tries to find an outlet is better cultivation and the spread of irrigation. But for the latter of these capital is required, and this is what the cultivator does not possess.

42. With the Assessment Reports I submitted statements showing the average size of the proprietary and cultivating holdings; but these, as I pointed out, are quite unreliable. The holdings were of the "Khatauni;" and calculations based on them are necessarily valueless. Thus A and B hold land separately, having divided it, and also have some in common. A has mortgaged a couple of fields to two other proprietors, and B may have done the same. Each of these facts is shown as a separate holding. Or again a proprietor cultivates his own land, and has also rented land from another; and he would appear both as a proprietor and as a tenant. I have now done my best to find out what the actual size of the holdings in the different tahsils is. I have taken the total of all land cultivated by proprietors, whether it is their own or that of other proprietors, and divided this by the total number of proprietors whose names appear in the Khewat. Only those are shown as tenants who do not own land. The result is as follows:—

NAME OF TAHSIL.	KHEWATDARS.		OCCUPANCY TENANTS.		TENANTS AT WILL.	
	No.	Area cultivated by.	No.	Area cultivated by.	No.	Area cultivated by.
Saurála ...	22,517	136,300 6	1,059	4,160 4	2,388	6,816 3
Ludhiána ...	51,308	321,496 6	3,903	11,582 3	6,209	21,447 3
Jagrón ..	26,608	211,509 8	1,855	11,352 7	1,491	6,759 5
TOTAL ...	100,533	669,305	6,817	27,094	10,088	35,022

Thus the average area to every cultivating proprietor who is liable for Government revenue is for the whole district six acres. In Jagráon tahsíl it is eight acres; and in the Jangal Circle of Ludhiána, nine or ten. Every khewatdar is not necessarily the head of a family, for he may be unmarried; but he is in every case an owner of land in his own right.

B.—Division into Tribes and Castes.

Divisions of the population into tribes and castes. 43. The principal tribes of the district with the number of persons of each are as follows :—

Class.	Tribe.			Total.	Per cent on whole population.
Priestly and Religious...	Brahmins	...	...	25,121	4
	Eqír	...	...	19,185	3
Traders & Shop-keepers	Khatri	...	...	15,944	3
	Bánia	...	...	8,722	1
	Sunár	...	...	5,562	1
	Sud	...	...	2,975	...
Agriculturists	Jat	...	...	222,665	36
	Rájpút	...	...	30,957	5
	Gujar	...	...	30,759	5
	Araien	...	...	27,229	4
	Awán	...	...	3,312	1
Menials and Artizans ...	Chamár	...	...	59,655	10
	Chuhra	...	...	18,525	3
	Juláha	...	...	14,728	2
	Takhán	...	...	18,809	3
	Jhínwar	...	...	15,835	3
	Naie	...	...	11,065	2
	Lochar	...	...	8,520	2
	Kumbár	...	...	8,226	1
	Mochi	...	...	8,171	1
	Chímba	...	...	7,158	1

This leaves 56,212, or 9 per cent of the whole population unclassified.

44. The Brahmins of the district are scattered all over it. They are seldom to be found engaged in trade, and for the most part live on the Jats of the uplands, few villages being without two or three families; but their services are also required by the Hindus of the large towns. They are of the usual subdivisions of Sársut Brahmins, and no detailed account of them is necessary. The Hindu Jats perhaps pay

Priestly and Religious
classes: Brahmins.

them more attention than the Sikhs, but even the Mahomedan Rájputs make use of their services on occasions.

The principal ascetic classes included under the general term *Faqr* are—*Bharaies* (5,590). The Hindu Jats of the eastern parts are almost all “Sultánis”

Other religious classes.

Bharaies.

by religion; and outside of each village there is a small “Pír Kháná” or shrine erected in honour of Sakhi Sarwar Sultán; and this is in charge of a Bharaie or guardian, who is a Mahomedan and is not a celibate. These men are said to be Shékhs, because they belong to no other tribe. Every Thursday they go to the shrine in the evening, light a lamp and beat a drum at it. The people make small offerings of cash, grain, &c., (“charáwa”) which the Bharaies take. They also receive small presents at other times and accompany the pilgrims who go to visit the tomb of the Saint Sultán in the Dera Gházi Khán district. There is generally a small plot of land, half an acre or so, attached to the village shrine, of which the Bharaie gets the produce.

The *Udásis* (2,366) are Sikh ascetics of a sect founded by the eldest son of Guru Nának, (Srichand). They are

Udásis.

mostly Jats by origin, the *chela* or disciple and successor being usually chosen from this tribe; and are to be found in possession of the Dharmsálas in Hindu villages, where they distribute food to such as come for it, and read the “Granth,” both of Bába Nának and of Guru Govind, although they do not attach such importance to the latter. The head of the college is called “mohant” and the disciples “chélas.” They live in Sikh as well as in Hindu villages, and it is probably on this account that they do not quite neglect Guru Govind. They rarely marry; and if they do so, generally lose all influence, for the Dharmsála very soon becomes a private residence, closed to strangers. But in some few families, such as that of Jaspál Bángar, which keeps a very large “Langar” or alms-house going, it has always been the custom to marry, the endowments being large enough to support the family and maintain the institution; but the eldest son does not in this case succeed as a matter of course. A *chela* is chosen by the “mohant” or by the family. If a mohant whose predecessors have not married should do so, he would lose all weight with the people. As I notice elsewhere in speaking of the máfi grants, we have encouraged this class to throw off their religious character by converting them into mere landed proprietors.

The *Bairágis* (1,889) are to be found in charge of the Thákardwáras or temples of Thákar, and the *Saniásis*, who are

Bairágis and *Saniásis*, &c.

very few in number, of the Devidwálas or temples of Devi. There are a very few *Nirmilas* and *Nihangs* to be found in some villages, where they occupy the Dharmsálas and also some *jogi* faqirs. These do not require a detailed account. There are one or two “dérabs” of “Suthra Sháhi” faqirs.

The Saiads have not been included in the religious classes, as they are really agriculturists. The Bharaies, though

Mahomedans.

Mahomedans, minister chiefly to the Hindus.

There are a few Mahomedan faqírs belonging to the Madári and Jaláli sect mostly.

45. Chief amongst the mercantile class are the Khatris (15,944).

Mercantile classes : Khatris. They are to be found mostly in the towns, and engaged in trade of all sorts. The principal "Gots" are Beri, Maria, Lúmb, Jaidke in Jagráon; Thápar, Dhande, Adh in Ludhiána. Elsewhere the Gots are very mixed.

The Bánias (8,722) are not numerous; but are to be found everywhere. In the Jangal villages they are the shop-keeping class to the exclusion of all other tribes. They are in religion Jains and Hindus (Vaishnavas), principally the latter. The Agarwál "Got" predominates.

Sunáras. The Sunáras (5,962) are found all over the district, and are engaged in their trade of gold and silversmiths.

The Suds (2,075) deserve mention here, because the Ludhiána district is considered the head-quarters of the tribe. I find from the Census Report that there are less than 20,000 of them in the Province, and that more than a quarter of these are in the Kángra district, and more than half in the Jalandhar division. These people are distinct from all other Hindus around; but their origin is a mystery, all explanation by the people themselves having the object of giving a meaning to the name which will reflect honour on the tribe. They say that they are really the same as the Raikwáls of Agra, Delhi, &c., and they have the same "Gots," but do not intermarry with them. They have become a separate tribe like the Kaiaths, whom they resemble in the laxity of their religious observances, and in their liking for wine and flesh. Geographically they are divided into the hill (Uchándia), and the plain (Newándia); and socially into pure (Kkara), and inferior (Gola, Chechár). The Suds of the hills are said to belong to the latter class, who have degenerated at some period by widow marriage. The line is now drawn hard and fast; and the two classes do not mix, although the Gola Suds do not now marry widows. The Suds are engaged in money-lending principally, and are to be found in Ludhiána and a few villages round and in the town of Máchiwárah. They are fond of service as munshis; and half the Patwáris of the district and most of the Kánungos till recently belonged to the tribe. Though of a good physique, they do not like active service. They are most intelligent, especially in their own interests; and there are many sayings in proof of this, *e.g.*, "Sud pár, ghattri urár" (if a Sud is on the other side of the river, leave your bundle on this side).

46. A better idea of the importance of the various tribes that

Agricultural classes. Division of the land amongst them. make up the agricultural community will be got from the following abstract of Appendix VI accompanying this Report, which shows the proportions in which the land of the district is divided between them.

TOTAL.	JATS.		Rajput (Mahomedan).	Gujar (Mahomedan).	Araien.	Others.
	Hindu.	Mahomedan.				
100	62	4	0	7	3	14

The Jats.

Religion of the Jats.

47. Thus the Jats make up more than $\frac{1}{3}$ of the whole population, and own 62 per cent. of the land. They are distributed by religion

as follows :—

Total.	Hindu.	Sikh.	Mahomedan.
222,665 100	95,000 43	102,447 46	25,218 11

The Mahomedan Jats appear to have been converted to Islām in the time of Aurangzeb. They are to be found in the Samrāla and the upper part of the Ludhiāna Bēts, or just over them. The other Jats are either Sultānis (Hindus), or Guru's Sikhs (including Kukas). The Jats adhere to their Gots or clans through all religions; and their belonging to one faith rather than to another is generally a mere matter of locality. Thus we find of the Garewāl "Got" Mahomedan villages in the Samrāla Bēt; and in the uplands Hindu or Sikh. The Mahomedans are perhaps rather bigoted; but with the others I think that religion will be found to have at present a secondary place.

48. The Hindu Jat of this district deserves all the good things that have been written of the tribe. If the Jats are the best peasantry in India, I think we may say that the Málwah Jat possesses in a greater degree than any other branch of the tribe the qualities which have earned for it this distinction. In the "Málwah" country I include, as do the people of the Panjáb proper, at least the whole of this and the Ferozepur districts, together with the greater part of the Protected Territory to the south of them. In physique the "Málwah" Jat is not surpassed by any race in India, if indeed he is not to be put at the top of the tree in this respect. I do not think that any Regiment in the Bengal Army can show such fine stalwart soldiers as those recruited from this part of the country; and, although detractors are wont to say that he has a small heart in a large person, the "Malwai" has given ample proof that this is mere libel. The Málwah Jat appears to sur-

General qualities of the Jats as agriculturists.

pass his brother of the Mánjha in prudence and thrift; and he is a better cultivator, more capable of managing his farm. As evidence of this I would point to the manner in which the former has succeeded in the struggle going on under our rule between the agricultural and the money-lending class. With the Málwah Jat as a rule the class whose business is ordinarily money-lending has really very little chance, for the former turns his hand to this as easily as to anything else. When a Jat has spare money he will seldom squander it; but, if he gets a chance, will lend it on the security of land. Where Khattris or Suds have established themselves in the early years of our rule, it is very hard for the people to shake them off; but in the Dháia villages most mortgages of land are to Jats, some of whom have established a very extensive money-lending business. The Mahomedan Jat, though much superior to the Rájput or Gujar, is not equal to his Hindu fellow-tribesman. He is to be found along the river, principally in the Samrála tahsíl; and, although excelling as a cultivator, he is often reckless and extravagant, a result that may be due either to his religion or to his surroundings, climate, soil &c.

49. There are two types of the Hindu Jat to be found in this district, the difference being entirely the effect of locality. The Jat of the Pawádh, or highly cultivated and irrigated eastern tract, is a slave to his land. With him it has been all work and no play for generations, and this has told on his physique and intellect. The cultivation of his holding is a constant round of toil, especially where there is a large area under sugarcane; and he is lucky if able to knock off and give himself and his cattle a few days' rest during the rains. He has no thoughts beyond his village; and never dreams of service. But withal he is thrifty to niggardliness, and industrious beyond comparison; and it is sheer bad luck if he gets his head under water. When he has a little money to spare he at once lends it on the security of some less lucky sharers' land. For the Jat of the Jangal the labour of cultivation is of the lightest description, and he appears incapable of remaining idle for long. He turns his hands most readily to carrying; but also goes in largely for cattle trade, service, anything in fact that will enable him to turn an honest penny, for he is seldom a rogue. His favourite method of spending the time between reaping and sowing, when he and his cattle would otherwise be absolutely idle, is to start with a cart in the direction of Ludhiána, sell his own grain, and whatever more he can collect, and return with a load of "gur" or anything else that he thinks he will be able to dispose of at a profit. The cart is probably at first the ordinary rude one used in field work, and the cattle are those that work in the plough; but after a few successful journeys he buys a better cart and probably better cattle, thus extending the field of his operations. This difference of life has produced in him mental and physical qualities much superior to those of the Pawádh Jat, although the latter is far ahead of other tribes in both respects; and one can tell the difference at a glance. The Jat of the Jangal is undoubtedly at present

the finest stamp of peasantry in India. What he will be when irrigation from the Sirhind canal is fully developed remains to be seen. The Pawádh Jat has but one string to his bow, while his brother of the Jangal has at present many. Hard cash finds its way into the Jagráon and Lower Pakhowál villages through half-a-dozen channels. Under former rulers, whose system was to take as much from the cultivator as they could get, the Jat was usually kept down; but since annexation his genius has had full play, and he is waxing fat; and I do not know of any class that ought to be so grateful to us. On occasion he can be extravagant, and very large sums are sometimes spent on celebrations, especially in Jagráon tahsíl. This generally means that a man has more money than he knows what to do with. Besides excelling as an agriculturist the Hindu Jat is a good subject and a most respectable member of society. He has as a rule no vices; and, although I would not assert that a lively sense of gratitude to us as his rulers is ever present in his thoughts, he knows that our Government gives him greater security than any preceding one did, and he is quietly contented. His chief fault is quarrelsomeness, which has now developed into litigiousness.

50. To the east of the district, and especially in the Samrála tahsíl the multitude of "Gots" amongst the Hindu Jats is a very remarkable feature. Not only do adjoining villages belong to different "Gots," but inside each village will generally be found two or three Pattis of distinct origin. This is accounted for by the manner in which the country was colonized. In the history of each village it will be seen that the founders came in comparatively recent times from different parts of the country, and belonged to different "Gots;" and that they united merely for their own convenience, the common tie of belonging to the same tribe being sufficient. To the south and west, on the other hand, we do find that the Jats in some instances came in bodies; and villages belonging to the same "Got" lie either in groups or within short distances of each other. Thus the Sidhu and Gil Jats appear to have come eastward in large parties, and to have settled down in adjoining or alternate villages in the western part of Jagráon. But the rule throughout the district is variety of "Gots," and the few groups of villages that there are, each belonging to one "Got," are the exception. The reason for this apparently is that in the eastern parts, in the neighbourhood of Sirhind and Ludhiána, the Imperial authority was always strong enough to protect its subjects, who settled down in small villages as they came; while in the west it was less felt, and people of one tribe had to collect in large villages for protection. In Samrála no attempt has been made to return the land as distributed amongst the various subdivisions; but in the other tahsils it was possible to do this roughly, as there were a few "Gots" owning villages and groups of villages. I give the details of area held by the leading "Gots" in these two tahsils:—

TAHSIL.	Total Jats.	Garewál	Gil.	Sidhu.	Dhálíwál	Dhilon	Sékhn.	Bhandher.
Ludhiána ...	68	8	3	5	3	1	1	3
Jagraón ...	68	1	5	9	6	2	.....	.....

First in rank are the Garewál Jats. This "Got" holds about 50 large villages near Ludhiána in a group, and members of it are also to be found scattered over the district: but their number is not shown in the Census tables. They trace their descent from a Rájput, Rája Rikh, who came from the south and settled in Kalur in the Hills. Bairsi, son of Rikh, left Kalur and settled at Naiebad to the south of Ludhiána, and contracted a marriage with a Jatni, called Rupkour, and had to start a "Got" for himself as his brothers would have nothing further to do with him. His son was "Gare," whence the name of the Got; but another fanciful origin is "Karewál" from Karéwa. The descendants of Bairsi gradually spread over the country to the south-west of Ludhiána. The Garewáls are admitted by the other "Gots" to be superior, and are called "Sáhu log," i.e. superior. As amongst the Rájputs, their women are secluded, and do not take part in field work. Their girls are sought in marriage by the best families of Sardárs, and even by Rájas. The Garewál families of Raipur, Gujarwál and Nárangwál had a sort of local authority at the close of the last century, and are called by pre-eminence "Sáhu log." The Garewáls are in consequence of all this the proudest of the Jats, and somewhat inferior as cultivators. They are also very extravagant and quarrelsome; but they take to service better than any other "Got" as they hold it honourable, and in all of their villages will be found men who are either serving in our army or in receipt of pensions. A great deal of money thus finds its way into their hands. When they trust to cultivation alone they are not so successful.

The Gils own about 40 villages, mostly in Jagraón tahsil; and are returned as 11,899 in number. They are next in rank to the Garewáls, and their women are secluded. They are also fond of our service. They here claim descent from Surajbansi Rájputs, their ancestor being a king of "Gharméla" in the south, whose son, Akaura, took to agriculture. The son of Akaura, Gil, founded the "Got," which moved northwards by degrees. They came to this district from Kusla in the "Jangal" ilaqa about 250 to 300 years ago, in the reign of Sháh Jehán it is said. The Gils are first-rate agriculturalists; but their habits are generally extravagant.

The Sidhus have a good many villages in Jagraón tahsil where there are two or three "Sidhwans." They are a well-known Got throughout the Lahore and Amritsar divisions, and much has been written of them. Those of the Ludhiána district are of the Barár subdivision; and came from the south-

west, from Faridkot it is said, in the time of the Rais within the last 200 to 300 years. The Sidhus number 13,194.

The Dháliwáls (12,145) have a good many villages lying about Pakhowál and in the Jagráon tahsíl mostly. Their ancestor was, as usual, a Rájput, who came from Jessalmir and settled in Kángar in Nábha territory, becoming a Jat. From Kángar his descendants came into this district under the Rais and their Sikh successors. The Dháliwáls are accounted one of the superior Gots of Jats, but do not differ much in their customs from the others.

The Bhandhérs are the descendants of Bhandhér, who was the offspring of the union of a Rájput and a woman of inferior caste. He settled in Bhatinda first, and thence his descendants migrated to Rao Siána in the Maloud ilaqa, where the tribe now holds 10 or 12 villages.

The Sekhons had a similar origin to the Bhandhérs, and came to this district from some place in Patiála territory, Bhádour it is said. Their villages are scattered all over the district.

The Dhilons (6,317) say that they came from the Mánjha in the reign of the Emperor Mahomed Sháh.

Minor subdivisions,

Minor "Gots" of the Jats are—

Gandhu	...	...	...	...	4,964
Mán	...	...	...	...	4,296
Sandhu	...	...	...	...	4,258
Mángat	...	...	...	...	3,724
Chína	...	...	...	...	3,008
Ráthi	...	...	...	...	2,930

It would take up too much space to detail the tradition as to the origin of each of these. They are to be found scattered over the district, holding single villages or subdivisions of villages.

50. The Rájputs are undoubtedly the oldest of the agricultural tribes that now hold the district. Only 1,600 of them are Hindus, and these inhabit two or three villages in Samrála tahsíl. It is good evidence of the demoralizing effect of the Mahomedan religion that the Hindu Rájput is very little inferior to the Jat as a cultivator. In the Bét of Samrála the most prosperous village belongs to them, the proprietors being free of debt and largely engaged in trade. The Mahomedan Rájput of this district possesses at least all the bad qualities generally ascribed to his tribe. He has a good physique, but this is about all that can be said in his favour. As a cultivator he is useless, being indolent and apathetic to a degree. He will never do an honest day's work if he can help it, and spends every penny that he can borrow. His village is generally a picture of slovenly cultivation; and he will tell one that this is because it is not his proper business to follow the

plough, and because his women are secluded. If possible he will rent his land to some one else, and never fails to try to spend more than his neighbour on a marriage celebration, regardless of the fact that it is certain ruin to him. His women are said to be quite incapable of managing their household affairs, and the Hindu shop-keeper in a Rájput village makes a fortune in a very short time, at first, it is said by cheating the women, and then by getting the men into his books. If a Rájput does take to service, it is only in a half-hearted way; and he will on the slightest excuse throw it up and return to his village. In fact the Mahomedan Rájput of this district has, as far as I know, no redeeming points in his character, and is a perfectly useless member of society. I may mention that at the Regular Settlement the Mahomedan Rájput villages were treated very leniently, and in many cases pay half or one-third less than their neighbours; but this moderation appears to have had no other effect than to encourage further extravagance. The great feature in a Rájput's character is, I think, a complete want of anything that could be so designated. He is the most vain and foolish of mortals, and can seldom give a reason for anything that he does. He is, as a matter of course, discontented; but it would require a peculiar state of society to suit him. These remarks apply to the tribe as a whole; but there is a daily increasing number of members of it in whose favour an exception should be made. The principal Gots or subdivisions of the tribe are the "Ghorewáh" in the east, and the "Manj" in the west (Jagrón tahsíl). The Ghorewáh Rájputs own a great number of villages along the Satlej in this and the Jalandhar district. They trace their descent from Hawáha, brother of Kachwáhá, who came into the country in the time of Shaháb-ud-dín Ghori (1150 A.D.), and was allowed a grant of as much land as he could ride round in a day, hence the name. Others say he presented a "nazar" of a horse, and got the tract which his descendants now hold. Half a Rájput's time is taken up in listening to absurd stories of this sort over the village pipe, while he ought to be working in his fields. The Manj Rájputs own a good many villages in Jagrón, Bét and uplands. They came from the south-west, their ancestor Cháchu leaving Faridkot and settling at Hatur. From Hatur the descendants of Cháchu founded several large villages, Audlu, Halwárah, &c., in this district, and also crossed the Satlej. The family of the Rais of Raikot is looked upon as the head of the "Got" on this side of the river. These Rais at one time held a great part of the district under their sway, and a detailed account of the family will be given elsewhere. Other "Gots" of the Rájputs are "Bhatti," "Chauhán," "Náru," "Janohi," &c.

52. The Gujars of this district are unable to give any distinct account of who they are or whence they came, but it appears pretty certain that they are a nomad race ("Gau-char" = Gujar) who moved from towards the hills in search of pasture and gradually settled down along the river for the sake of the grazing. They now hold a number of villages in the Bét or low lands, mostly in Ludhiána tahsíl. About 100 years ago Sardár

Sudha Singh and the Kákars, who held the Bét lands under Ludhiána, located them in villages; and they have only since then taken to agriculture. The Gujars of this district are all Mahomedans. They are of

Religion : characteristics.

good physique, tall and well made; but are said to be lacking in courage. Intellectually they are not strong; and they are, as a rule, much too easy going and careless to get on in these times. As cultivators they are not of the first class, though superior to the Rájputs. They have a hereditary liking for cattle, especially that of other people; and most of the Gujar villages contain men recognized by the police as criminals. They are as a tribe turbulent, discontented and lawless; and gave a great deal of trouble in the mutiny. Gujar women help their husbands in the fields. The principal subdivisions are "Gorsi" and "Chechi," also "Kálas" and "Paswál."

53. The Aráiens of the district appear to have worked their way

The Aráiens.

up the Satlej from the direction of Multán. They are also said to be Kambohs converted to Mahomedanism. It is very probable that they did come up the Satlej, for they can be traced along its banks in the low-lands of Lahore and Ferozepur and half-way up the Ludhiána district; but they are not to be found higher than the town of Ludhiána. They are probably a mixed race, gardeners by profession, who in some locality or other have formed themselves into a separate tribe and spread over the country. The Aráiens are all Mahomedans. They are generally small, wiry

Characteristics.

men, capable of a great deal of labour. As cultivators they rival the Hindu Jats, but are inferior to the latter in intellect. An Aráien will support himself and his family on a very minute area of irrigated land, on which no one else could possibly exist; but as the owner of a large holding he is less successful than the Jat, and does not seem to have the power of managing a large farm. All the members of his family assist the Aráien in his cultivation; and the women sell the vegetables or exchange them for grain. The Aráien is a very quiet and inoffensive member of society, and does not appear to trouble himself about politics. The principal subdivisions in this district are Ghalar, Ghalan, Jatáli.

54. The Awáns are said to be a race of foreigners, who came

The Awáns.

with the first Mahomedan invaders from beyond the Indus. The tribe holds some 10 or 12 large villages round about Ludhiána, situated in the low-lands and in the Dáña. Their number is understated in the Census, some having perhaps been returned as "Shekhs." The Awáns are all Mahomedans. They are a very fine, powerful race of men; and are inferior only to the Hindu Jats in intellect and enterprise. They are very fair cultivators, but do not depend entirely on agriculture, and are always ready to turn their hands to anything. They are fond of service in the army, police, &c., and most of their villages can turn out a number of carts, which are worked for hire. In the last Cabul war they made a great deal of money by carrying between Jhíam and

Pesháwar, and some of the villages depend much more on their carts than on their fields. They are an extravagant race, and spend at least as much as they earn. The Awáns are very strict Mahomedans, and say their prayers regularly. Very many of them have received a religious education and are Moulvis. Their women are secluded. Their chief fault is quarrelsomeness, which has, as in the case of the Jats, developed under us into a love for litigation.

55. There are a few Dogars in the Bét. They resemble the

Minor land owning tribes :
the Dogars.

Gujars, being of good physique, but wanting in intellect. As cultivators they rank with the Gujar, and run them very close as thieves.

Their women work in the fields. There are one or two whole Saiad villages; and the tribe holds shares in others scattered over the district. Those of

Taraf Saiadán, one of the subdivisions of Ludhiána, are respectable and well-to-do; but, as a rule, the Saiads are poor cultivators, being much

Miscellaneous.

too lazy. There are a few Sainis (301), and Kambohs (951), the latter being Mahomedans:

also some Banjárahs (942), and Lobánaahs (923), all in the Bét. The last two of these appear to have the same origin, (said to be a Rájput one, as a matter of course); but they are now quite distinct. The Banjárahs are a somewhat superior tribe, but it is said that in this district the two tribes intermarry. They are both Hindus or Sikhs by religion; and, besides agriculture, are engaged in carrying grain &c. on bullocks; and the Lobánaahs in making ropes, brushes, &c., from "munj." Ráwats own one village near Ludhiána, and number 1,807. They have certainly nothing in common with Rájputs, being the mildest of men, and first-rate agriculturists. The criminal classes of Hárnis, Baorias, Gaunemárs, are also land-owners. The Hárnis were settled down in three or four villages in the east of the district by the Sikh chiefs who overthrew the Rais of Raikot; and the others own each of them a village. I suppose these men have all been returned as Rájputs, for so they call themselves. An account of them will be found elsewhere.*

56. Next in point of numbers to the Jats are the Chamárs,

Menial and artisan class-
es : Chamárs.

(59,655), who are returned as nearly one-tenth of the whole population of the district. These people are the most degraded of all classes

except the Chuhras; and their position in the village very nearly approaches to that of servitude. They are known as "begári," and are found attached to every village in the district, for the zemíndárs† cannot get on without them. They eat the dead cattle, and are considered so unclean that a separate place is assigned for their residence. They are bound to perform certain tasks (begár) for the zemíndár, and receive certain allowances of grain and all carcasses of cattle. They cannot change their place of abode, for a chamár of one village would not be allowed to settle down in another. Further details as to their dues and services will be found elsewhere. They are all leather-workers, tanning

* Para. 157.

† The word "zemíndár" when used in this Report is equivalent to "agriculturist."

the skins of the dead animals that are given them, and making buckets for the wells, blisties' mashaks (water bags), shoes, &c. They are paid for all new goods supplied, but repairs are included in their tasks. The chamárs are not recognized as of any religion. They bury their dead.

The Chuhras (18,525) are found mostly in the towns and in some villages where they are servants of the higher classes of Jats and of the Rájputs, or are village servants (kamín) for the purpose of summoning people ("bulári").

Tarkháns or carpenters have taken to agriculture, and own shares in several villages. Those who follow their hereditary occupation are to be found in nearly every village, for they are a necessary element in the agricultural community. The Tarkhán, though classed as a village menial (more properly an artizan), is a man of very superior intellect, and occupies a good social position. He can consequently make his own terms with the zemíndár, and moves about as he likes. He does all sorts of carpenter's work, receiving a fixed allowance at harvest time for all repairs and the price of all new work. There is a large colony of Tarkháns working as carpenters in Ludhiána. These make carts, all sorts of furniture, boxes, &c.; and some of them have amassed great wealth, which they invest in land when they can. Many of them are also in service; and it is a proof of their good social position that Rám Singh, the gurn of the Kukas, belongs to the tribe.

The Lohárs are also village servants, who do all the iron work of the agriculturists, or they are settled down in the larger towns and follow their trade there.

The Jhínwar is not necessary in most villages, for the Jat women usually fetch the water for domestic use themselves. He is to be found in the towns or in the Rájput and higher class Jat villages, where the women are secluded. His services are required everywhere in marriage and other celebrations.

The Naie is found everywhere; and is a very important village servant. He is the barber, and is always employed in arranging betrothals, being sent as a "Lági," or go-between.

The Juláhas or weavers are scattered over the villages, where they weave the cotton thread of the zemíndárs into cloth (woollen blankets are woven by Chamárs or Chuhrás who have taken to the profession). There is a large colony of these people in Ludhiána.

The Kumhárs (brick-makers), Mochis (leather-workers) and Kumi ár, Mochi, Chimba, &c. Chímbas (washermen and cloth stampers) reside mostly in the towns. The zemíndárs generally make their own bricks for the wells, but go to the Kumhárs for water jars (chátti) and other utensils; and have an agreement by the harvest about these. The Mirásis (5,489) are found all over the district, principally in the Rájput villages. They live by alms.

57. I ought perhaps to have classed the Kuláls (1,955) as agriculturists, for they are all either land-owners or in service, generally both. The Kapurthalla Chief held a very large portion of this district under Máharája Ranjit Singh; and this has given the tribe a step in the social scale. They call themselves Ahluwália or Néb, never Kalál, and are Sikhs. Some of them hold small jagirs, and they generally distinguish themselves in service. The Patháns (3,629) are mostly confined to Ludhiána, the refugees from Cabul; but an ancient colony of them hold the lands of Bahlolpur. The Kashmíris (2,492) are settled in the city of Ludhiána.

C.—Religion and Social Life.

58. The Census returns distribute the population of the district according to religion as follows :—

RELIGION.				TOTAL.	PER 10,000.
Hindu	...	...	...	275,240	4,448
Sikh	...	...	...	127,143	2,055
Mahomedan	...	...	...	213,954	3,457
Others	...	...	...	2,498	40
TOTAL	...	...	...	618,835	10,000

I have already noticed that the agricultural population of the eastern part of the uplands is strong in the Hindu and weak in the Sikh element. Religion follows very closely the main division of the Jats, which I have sketched in para. 49; and Sikhism has laid hold on those of the western parts and of the "Jangal," while to the east the people are mostly Hindu. The following details will show that this is the case :—

Talúq.				Samrála.	Ludhiána.	Jagrón.
Hindus	...	...	...	89,154	130,478	55,608
Sikhs	...	...	...	16,893	63,633	46,617

The Hindu population of the Jagráon tahsíl is made up of the mercantile, trading, and miscellaneous classes inhabiting the towns and following their occupations in the villages; and it may be said that the Jat population is entirely Sikh, the total of the Jat population in the tahsíl being about a quarter of that in the whole district (220 thousand). On the other hand, the proportion of Sikhs is very small in Samrála; and, if we had the details for Ludhiána tahsíl, we should find that to the east of the Maler Kotla road most of the Jats are Hindus, while to the west of it and towards the Jangal, they are all Sikhs. From what I have said of the two types of Jat I think it will be seen that the adoption of one religion or the other depends on the mental qualities of the people, which again are the result of locality. The Jat of the east has little time for any religion, and we might expect the form adopted by him to be of a lower order, and more involved in superstition. He keeps his ancestor's religion as he does their system of cultivation; and wants no change, having few ideas beyond his fields. On the other hand, the Jat of the west is independent in his religion as in everything else; and Sikhism is just the sort of faith that would commend itself to his mind.*

The Mahomedan portion of the agricultural population is confined to the Bét and the country just over it, which they hold to the almost total exclusion of Hindus. They have also villages scattered over the uplands; and the Mahomedan element is very strong in the town of Ludhiána.

59. It is not necessary that I should enter into a detailed account of the various Hindu sects, as it would be out of place here; but some mention may be made of the Sultánis, who make up the greater part of the Hindu Jat population. These are the followers of the Mahomedan saint, Sakhi Sarvar Sultán, whose tomb is at Nigáhia, in the Dera Gházi district. Mr. Ibbetson gives his date as of the 12th century. I have been unable to find out how and when the worship of the saint spread through this district; but it is said that the Jats brought it with them, and they may well have done so in the case of all immigrations within the last 300 or 400 years. It is probable that the belief spread eastwards in the 15th and 16th centuries, and that at the time of Guru Govind Singh most of the Jats held it, the conversions to Sikhism being from it. The Sultánis are nominally ordinary Hindus, worshippers of Shiv or of Dévi; but it is characteristic of popular Hinduism that the saint and his shrine, being something more tangible than the deity, have entirely excluded the latter, and that the saint should have been a Mahomedan. They are, as might be expected, very lax Hindus. I have already (in para. 44) given an account of the Bharáies, or guardians of the village shrines of Sultán (pírkhána). These pírkhánas have always the same shape—a square base with four small domes at the corners, and in the centre a small temple 10 or 12 feet high.

* The real cause of the weakness of the Sikh element in the eastern parts, is that they were always under the direct influence of the Mahomedan power; and the spread of the faith amongst the agricultural population was thus checked. It was on the limits of the Empire where persecution could not easily reach it that the religion acquired its greatest strength.—T. G. W.

There is a door in front of the temple ; and, facing this, two or three niches for lamps. Otherwise it is empty, there being nothing to represent the saint. The Thursday offerings at the shrine are not universal, and are generally made by the women. The Bharáie attends all that day. It is very common for a person wishing to attain some object (e.g. to succeed in a law suit) to make a vow to the shrine ; and offerings in this way also go to the Bharáie. Once a year, on a Friday, the ceremony of " *Rót* " is performed in most Sultáni families. A huge loaf is made of one maund (katcha) flour and $\frac{1}{4}$ maund (katcha) gur, and cooked. The Bharáie attends and beats the drum, and sings the praises of the saint while this is preparing ; and receives one-quarter of the bread, the other three-quarters being eaten by the family and the neighbours. This is the great observance of the Sultánis, and they really appear to have no others.

60. The Ludhiána district, and adjoining Cis-Satlej territories, figure largely in the annals of Sikhism. Guru Nának and his successors made many converts in this tract ; but it is more famous as the scene of the wanderings and persecution of the great Guru, Govind Singh ; and it was here principally that the religion took its militant form from contact with the Mahomedans. Sirhind, the head-quarters of the Mughal power in these parts, is only a few miles east of the Samrála border. It was against this town that the earliest efforts of the Sikhs were directed ; and it was here that, after the dispersion of the Guru's followers by the lieutenant of Aurangzeb, the wife and children of Govind Singh were murdered—a deed that has made the town accursed to all his followers. It is in this district, too, that the latest development of Sikhism has had its origin under Rám Singh, Kuka. The two religions of the Jats, i.e., the worship (for such it is) of Sultán and Sikhism, do not really differ very much from each other in practice. The ordinary Sikh of the district is a Hindu who reverences the Gurus and their Scriptures, and in token of this has taken the baptism, and adopts at least some of the signs enjoined by Guru Govind Singh. The Sultáni is a Hindu who has inherited the worship of Sultán ; but the more intelligent of them see the absurdity of this, and really believe in the Gurus as much as the Sikhs do. Sultánis are constantly taking the " *pahul* " or baptism, and the conversion makes almost no difference to them, except that they have to give up smoking. I have often been told by a Sultáni Jat that he did not become a Sikh because his father was not one, and it was not the custom of his family to take the " *pahul*," but that his sons would be Sikhs ; and he had really no better reason for his own form of religion, which he admitted to be foolish. Such a distinction as the manner in which sheep and goats ought to be killed for food is not likely to affect a people who never touch flesh, and really consider it a sin to kill any animal. The Málwah Sikh of the present day admits the Hindu gods, and follows the Brahmins in everything. He is very unorthodox on most points, but has taken the " *pahul*," generally from the hands of some holy man who has visited his village, less often at Amritsar. After this he adds " Singh " to his name, if he has not taken it in

anticipation, must renounce smoking, and keeps three out of the five "k's" enjoined by Guru Govind Singh, viz., the "kes" or long hair, the "kanga" or wooden comb, and the "kach" or drawers. There is nothing approaching to bigotry in the disposition of the Sikh Jat; and so much of his faith as is not made up of these few external observances, which are after all more of a social than of a religious character, is the religion of humanity preached by the earlier Gurus. A Sultáni will generally call himself a Sikh; and does not seem to recognize much difference between himself and the Guru Sikh, except that the latter cannot enjoy his pipe. Sultán is attended to once in the year; and even this is a mere matter of custom. The Sultáni will say that he reveres the Sikh Gurus; and no wonder, for the moral precepts of the "granth" might belong to purest form of religion. The real religion of both Sikh and Sultáni is a belief in one god, and in every-day life there is blind obedience to the Brahmin or other priest.

61. The most important of the recent revivals in Sikhism is that of the Kukas which is a protest against the present laxity, and an attempt to restore the political religion of Guru Govind Singh in its purity. "This sect was founded about 35 years ago by an Udási Faqír, an Arora by caste, called Bálak Singh, who lived at Hazaron in the Ráwalpindi district. His followers were called Sagiásis or Habiásis; and after his death in 1863 the movement died away in the western Panjáb, but was energetically stimulated in the central and eastern districts by his successor, Rám Singh, a carpenter of Bhaini in Ludhiána. The tenets of the sect proclaimed Govind Singh as the only true Guru, prohibited all worship save the reading of his "granth," and all employment of Brahmins; and in many ways revived the original doctrines of the Sikh faith. They included the abolition of caste and of restrictions upon intermarriage, abstinence from meat, liquor, and drugs, and comparatively free intercourse between the sexes. The sectaries carried staves about in their hands, tied their turbans in a peculiar fashion (*Sidha pag*), wore a necklace of woollen cord tied in knots, and had a watchword known only to themselves. Rám Singh presently declared himself to be an incarnation of Guru Govind Singh, and preached the revival of the Khálsa and the overthrow of the English Government. His followers used to meet by night for the purpose of drill, while, as usual in such cases, a good deal of religious hysteria was excited, and ended in much sexual license. The attention of Government was attracted to these proceedings as early as 1863, and shortly after this date the sect began to be known as Kukas, or "shouters," a name which has now superseded their original designation. For several years these people did nothing worse than defile or destroy shrines and idols, and murder butchers and others whom they suspected of slaughtering kine; but as early as 1869 there was a small Kuka outbreak in Ferozpur, which seems to have had a political object; and in January 1872 the Kuka rising in Maler Kotla took place, which ended in fifty of the ringleaders being blown away from guns, some thirty more being executed, and Rám Singh being deported. The sect cannot be said ever to have attained any general popularity; its followers have throughout been

drawn almost exclusively from the lowest classes, their attacks upon sacred places have outraged the feelings of their neighbours, while the pure morality, which they at first preached, has been superseded by the most unbridled license under the name of religious enthusiasm, men and women dancing naked together and indulging in orgies which have alienated the sympathies of the more decent portion of the community.* The above account of the Kukas is taken bodily from Mr. Ibbetson's Census Report. Rám Singh was born in Bhaini Ala, 14 miles east of Ludhiána about the year 1820, the son of Jassa, a carpenter. He was at one time in service in the Khálsa army at Lahore; and, on giving this up, established a shop at Ludhiána. This failed, and he worked as a carpenter in his own village and at Ludhiána. Then he took to wandering about the country, plying his trade; and finally became the disciple of Bálak Singh in Hazaron. When he had established some reputation he settled down at Bhaini between 1850 and 1860, and thence disseminated his doctrines. The sect increased rapidly, and followers came from all parts, never empty handed. He was soon able to set up a large "Déráh;" and at the time of his arrest in 1872 used to go about followed by a large retinue and in great state. I very much doubt if it can be said that even the majority of the Kukas are drawn from the lowest classes, for the sect has made much more progress amongst the Jat Sikhs than any returns would show. The excesses committed by a small body of fanatics in 1872 were probably disapproved of by the sect at large. The principal outward signs of the faith are the straight *pagri*, and the woollen cord (*máhla*); but since the outbreak of 1872 (of which an account will be found elsewhere)* the first of these is not worn by many Kukas; and the cord is kept under the clothes instead of outside, as it ought to be. A dispensation from the Déráh (where Budh Singh, brother of Rám Singh, resides) is easily obtained; and it is evidently the intention of the sect to give up all the outward marks of their faith so long as they are persecuted. A Kuka would call himself a Sikh unless he were well-known to be a Kuka; and I think that only a very small proportion of the followers of Rám Singh have been returned as more than Sikhs, which of course they are. The truth is that it is not possible for a Kuka to be a loyal subject of the British Government, as the avowed object of Guru Govind Singh, whose incarnation Rám Singh professes to be, was a temporal kingdom; and the establishment of this under Rám Singh is the first element in the faith of the sect. It is not to be expected then that any man, unless he were prepared to break with society and give his enemies a constant hold on him, would admit that he belonged to the sect; and most Kukas would at the present time, even if asked the question directly, deny their faith.

62. The Mahomedans of the district are almost all Sunnis; 99 per cent. of them are so returned. No account of their religion. need be given here of the tenets of the three sects. The Jats, Rájputs, Gujars, Araiens, Dogars are all converted Mahomedans, and their conversion was probably forcible, so that we should not expect them to be very strict, or their

religion to be more than skin deep. They say their prayers when they have time; and generally keep the fast of Ramzán. The Mahomedan Rájputs are probably the most foolish in their religion, and most superstitious of all tribes in the district; and will believe in anything. The Awáns came to the country as Mahomedans, and are strong in their religion, most villages turning out several Moulvis learned in the law. They are, like the other Mahomedan tribes, guided by custom on questions relating to land; but, after I had attested their tribal code last year, a very strong representation was made to me to the effect that, although customs contrary to the Mahomedan law had established themselves, the tribe now wished to enter into an agreement for the future strictly to abide by the latter.

63. Mention has been made of the shrine of Sakhi Sarwar in Dérá Ghází Khán. This is a very favourite

Pilgrimages and religious fairs frequented by the people: Sakhi Sarwar.

place of pilgrimage for people of both the Hindu and Mahomedan religion, but principally for the Sultáni Hindus. Bodies of pilgrims start from the district in charge of the Bharaies in the month of Phágun (March), and return in Chét (April), the journey taking 1½ months if performed on foot, as it generally is. Offerings are made at the shrine of money, clothes, &c., without any special ceremonies; and three or four days are spent there. A "róť" is often made (see para. 59). It is said that leprosy used to be cured by a visit to this shrine; but generally a man gets whatever he wishes by making the pilgrimage, or goes on it to fulfil a vow. Hindus of all tribes go from this district

Temple of Dévi at Joállá Mukhi.

to the temple of Dévi at Joállá Mukhi in the Kángra district. They are accompanied by their families while, as a rule, men only go to Sakhi Sarwar. There are four seasons appointed in the year for this pilgrimage, the principal ones being in March and September. Offerings are made at the shrine, and the hair of the children cut off and left there. Some also go to Naina Dévi; and the Sikhs reverence this shrine because "Guru Govind" spent some time at it. The road to Joállá Mukhi lies through Hoshiárpur and to Naina Dévi through Rahon or Rupal.

Hindus also go from this, as from other districts, to the Hardwár fair,

Hardwar Fair.

"Darbár Sábib."

especially for the Kumbh, which comes every 12 years; and the Sikhs to the "Harmandar Ji," or temple at Amritsar for the Baisákhi and

Diwáli Fairs; but not in any great numbers, and more probably with a view to the purchase of cattle than of worship.

The next three places of pilgrimage to be mentioned lie in the

Kulchetar, Pehoa, Phalgu.

Amballa district near Thanesar, within what is said to be the circle where the last great battle between the Kairus and Pándus was fought. Kulchetar ("Kurukshetra"—Cunningham) is close to Thanesar town; and, when there is an eclipse of the sun, crowds of pilgrims go there and bathe, the day having been duly notified by the Brahmins. Pehoa is 12 or 14 miles further on; and a great fair is held there on the last day of the Hindu year (Chet

Chaudas), when the people bathe in the Sarasti river, which runs close at hand. Besides this when any one dies an unnatural death—by snake-bite, by accident, &c., in fact in any other than the orthodox way of being put on the ground—the funeral obsequies have to be performed by the Brahmins of Pehoa to whom presents are made. When the last day of the Sarád or Kanágat (the period of 15 days during which a Hindu worships his deceased ancestors) falls on a Monday, a religious fair is held at Phalgu, where there is a tank in which the pilgrims bathe. This fair was held in 1868, 1880, and will now be held in 1883. There is constant stream of pilgrims to Pehoa, for a Hindu or Sikh *must* go there if the person whose obsequies he is bound to perform has died an unnatural death. All the Hindus and Sikhs of the district alike go to these three fairs, crowds of them to the eclipse fair at Kulchetar.

A few Mahomedans go to the fair of the saint Pir Banohi held at Sunám in Patiála; one in 10,000 goes to Mecca: a great many go to Sakhi Sarwar, but the pilgrimage is essentially a Hindu institution.

64. The Chét Chaudas fair of the Hindus is held at four places:—
 Fairs in this district: Ludhiána, Máchiwárah, Gadowál and Sidh-
 Chét Chaudas. wan. The first three of these are over the
 Budha Nála, and the fourth close to the river.
 Hindus come, bathe, walk about, and then go quietly home. Some 30,000 from the villages come to Ludhiána, and about 10,000 to Máchiwárah.

The Roshani Fair is held at the shrine of a saint Pír Abdul Qádir Jaláni (called generally "Pír Sáhib") which lies in the open space between the Fort and city. This is a Mahomedan fair; but the Hindus of the city join in it. It is held on the 9th—11th of the Mahomedan month of Rabiul-sáni (called Míranji); and thus falls on a different date every year. The Mahomedans come from all the villages round, make offerings, and pay their respects to the shrine. There is a peculiar custom of bringing cattle and keeping them tied up at the shrine all night for good luck, this being called "Chowki," i.e. the cow or buffalo "watches" at the shrine. The fair is attended by 40,000 to 50,000 people from the villages; and the offerings, which are taken by a family of Sofis, amount to Rs. 300 or 400. The name "Roshani" is derived apparently from the tomb being illuminated at night during the fair.

The Bhaiewálá (Bhaicbálá) Fair is held in a piece of waste land of Dád, a village close to Ludhiána. It comes in the month of Mágh (10th Sudi), or about January: and is in honour of a disciple of Guru Nának, called Bála. There is a Samádh and also a tank, and Hindus go and make offerings of money, grain, &c., which are taken by the "massands" or guardians (Khattri Sikhs of Kudhání, Patiála territory). The people also make curds over night and take them to the fair where they eat or distribute

them after presentation to the shrine ; and it is the duty of every one to scoop out several handfuls of earth, originally no doubt with a view of increasing the size of the tank. The fair lasts one day, and some 10,000 attend it.

The Sudlakhan Fair at Chhapár, on the southern border of the district, is also an important one. It is held in the month of Bhádon (September) in honor of "Guga" (for an account of whom see Cunningham's Arch. Survey, Vol. XIV, pages 79-86) ; and there is a large shrine or "Mári" in his honour. The local account generally given of Guga is that he was a snake, and changed his form to that of a man in order to marry a princess. Afterwards he returned to his original shape ; but in the meantime acquired a great kingdom and won renown, which has come down to the present time. The "Dhádís," or itinerant minstrels, make up stories about Guga as they go ; and it is impossible to say what he was originally. The fair is a Hindu one ; but Mahomedans also attend ; and some 50,000 people assemble. Offerings are made at the shrine, which are taken by the resident Brahmíns, and these amount to some Rs. 300 a year. As at the Bháiwálá Fair, the people scoop out the earth, and cattle are also brought to be blessed as in the Roshani Fair. The shrine is said to have the power of curing snake-bite, and a person bitten will recover if put beside it. Perhaps this reputation is due to the traditions about Guga, in all of which there is something about snakes.

The only other fair worthy of mention is that of Bure Sháh, or "Makiphan," held at Jángpur (Jagrón tahsíl) in September when the maize is ripening. It is a Mahomedan fair really, and Mahomedan *faqirs* collect from all parts, but the Hindu Jats also come in great numbers. Altogether some 10,000 attend. The fair is held at night, and the people light lamps at the shrine and make small offerings, which are distributed amongst the *faqirs*.

65. A great feature in the Jat villages of the uplands is the Dharmsála, an institution partly religious, partly Religious and charitable institutions, in charge of an ascetic or Sádhi of the Udási or of some other order. This is endowed with a grant of land, either out of the Dharmásálas and Langars or alms-houses, village common, or from some private individual.

It is the duty of the Sádhi to spend all that he gets from the land or by begging in feeding the poor, keeping the "Langar" or alms-house going. Where, as in most cases, the occupant is an Udási, he or one of his disciples ("chela") also reads the "Granth" or Sikh scriptures. In the larger institutions of this sort the Sádhi and his chelas make up a college, the former being called the "Guru," or father of the chelas and the "Mohant" of the institution. The chelas collect money and sometimes set up in other villages similar institutions, affiliated to the original one. In former times the reputation of these Dharmsálas was very great, and few villages were without one ; but their treatment in our times has, I fear, resulted in the closing of most of the old ones. The grants of land were of

course intended for the support of the institution ; and under Sikh rule if a Sádhi misbehaved he was at once turned out. But at the Regular Settlement the incumbent was in every case returned as owner of the land, which was at the same time exempted from revenue for the period of Settlement. The result of this has been that the Sádhi has in most cases taken a wife, closed the Dharmshála to the public, and he or his children are now mere landed proprietors, with a very comfortable house built at the public expense. In some cases the Sádhi has not actually married, but taken to evil courses ; and the people are powerless to prevent his misappropriating the receipts. I have seen instances in which a Dharmshála of great repute has thus been ruined by a profligate Sádhi, who retained the land and house ; and the villagers have actually had to create another endowment and build a new Dharmshála. There was a very famous alms-house at Jassowál with endowments which amounted to several hundred acres, most of them unfortunately held revenue free in perpetuity ; and this has now fallen into the hands of a worthless character, and is closed to the public. I think it is a pity that the attention of District Officers was not directed to these institutions in the early years of the Settlement, for I have no doubt that the control of the village communities over them could have been maintained.

There are two or three famous Langars or alms-houses, well-known throughout the country. That of Bágrian lies 40 miles south of Ludhiána and is administered by a resident family of Takháns (called Bhaies), who hold in *jagir* two or three villages in our territory and more in Patialá and the other States, besides owning a large area of land. Numbers of travellers are fed daily from the public kitchen, which is open to all comers ; and I suppose that about 1,000 maunds of grain are distributed to the public annually. The “*déráhi*,” or building, is a very extensive one. The family has always been in the habit of marrying, and the son succeeds as manager. The present Bhaie, Narain Singh, is a gentleman of note, and an Honorary Magistrate in his own large village of Bágrian. This Langar was kept open in the worst years of drought (1862 and 1868), when the smaller institutions throughout the country were closed ; and afforded relief to numbers of the poorer classes, who flocked to it in search of food. There is also a large

Langar at Jaspál Bángar, near Ludhiána, which is kept by a family of Udási *jagirs* , whose custom is also to marry. This is an ancient institution, the first endowment having been made in the time of the Emperor Mahomed Sháh, and successive rulers having added others, till they have grown to some 800 acres. The present Mohaut is Portáb Dás ; and he appears to do his best to keep up the institution, which is held in great repute. His father, Guláb Dás, is said to have died deeply in debt in consequence of his expenditure in keeping the kitchen open in the years of scarcity.

The Heran (Jagrón tahsil) Langar is held by an Udási ascetic ; and, although its endowments are not so large as those of the other two, it is almost as well known. The present Mohaut, Gursarn Dás, is said to have distributed

in the famine of Sambat 1917 (1862) 8,000 maunds of grain which his predecessor had stored, and to have invited the starving people from all quarters, sending no one empty away.

66. A whole book might be written about the religious observances, superstitions, &c., of the people, but I can only refer to a few points in connection with this subject, which will serve as illustrations of the popular forms of belief.

Hindus and Sikhs (except Kukas) are greatly ruled by Brahmins. Every one has a Parohit or priest for every-day life, and a Páda or superior priest (who must be a learned man, read in the Scriptures)

Power of the Brahmins and priests.

for marriage and other celebrations.* Whatever observances a Brahmin enjoins must be performed; and there is often a good deal of tyranny, hard penances being ordered for trifling faults. The Mahomedans have not the same necessity for priests in every-day life; but it is scarcely their own fault that they are so free, for they would readily believe anything. I think that this is the only point of superiority in their every-day religion over that of the Hindus, that they are not allowed to indulge in rites and superstitions to the same extent.

I will next note a few of the more common superstitions connected with agriculture. A Jat must, before he begins to prepare his fields by ploughing for any harvest, ask the Brahmin whether the land is awake or asleep. If he is told that it is asleep, he must wait six days till it awakens. Then he may go on ploughing it whenever he likes. He must begin to sow any crop or harvest on Wednesday, and to cut it on Tuesday; and these rules are never departed from. Certain sorts of cattle must not be bought on certain days of the week—a buffalo on Tuesday, a cow or ox on Wednesday—and the prejudice against these days is not peculiar to the Hindus, as the Mahomedans appear to act on it. The observances attending the construction of a new well are elaborate. The Brahmin is asked to mention a lucky day and hour, and at the appointed time the digging of the well is commenced, and the “chak” or wooden frame put into the ground. The Brahmin ties a string to the chak and says some prayers, and then “gur” is distributed to the on-lookers. When the well is ready, the Brahmins are again called and fed, as well as any stray *faqirs* that there may be about, and not till this has been done is the well used.

The belief in ghosts and other supernatural agents is universal, and shared by Hindus and Mahomedans alike. **Supernatural agency.** The malevolent spirits usually recognized are “*bhuts*” and “*charels*.” A *bhut* is said to be the spirit of a man who has died “*av-ghat*,” i.e., not on the ground and according to the proper ceremonies; while a *charel* is the spirit of a woman who has died within 40 days of child birth or “*av-ghat*,” as in the

* A Jat if not a Mahomedan or a Sikh is almost invariably a follower of Sultán; and in every-day life the Bharáie takes the place of the Brahmin with the Sultánis; but the services of the latter are necessary for a marriage.

case of a man. Funeral ceremonies performed at Pehoa set the spirit at rest. If an evil spirit is offended it takes possession of the offender and works ill, bodily and mental. It may be expelled by a piece of red pepper put in the nose of the sufferer, or by inhaling the smoke of burnt rags. If this does not succeed, the patient may be taken to the shrine of Pir Banohi at Sunám, and the spirit exorcised. Another form of exorcism is that a lamp is moulded of dough, filled with oil and kept burning beside the patient. A girl sits feeding the lamp, and is asked what she sees in the lamp from time to time. She invents several things, and then says she sees a Darbár with people sitting in it, and amongst them the *charel*. On this the oil is carefully poured into a jar or bottle and corked up, the *charel* being, of course, in it. Men and women are said to have the power by repeating a certain charm, which few happily know, of extracting the liver from a child, thus causing its death. Such an unpleasant person is called a "Dain"; and if he or she looks at a child, death is the result. A "Deo" is an ordinary spirit who haunts old wells, pipal trees, and dark places generally. He is an orthodox ghost apparently, and many weird stories are told of him.

Sacred groves are to be found in some villages. The superstition about them generally is that they mark the spot where some holy man has become a "Sidh", i.e., been absorbed in the deity, and no one of the villagers would dare to cut even a twig of the wood. *Paqirs* and other holy men are allowed to take what they want for their own use; but the people believe that death would follow any such sacrilege committed by themselves. The Sidh is, strangely enough, supposed still to reside in the grove.

67. The villages of the district are built of sun-dried bricks; but in most will be found one or two houses of masonry. In the ordinary Jat village of the eastern parts the houses are huddled together and open into narrow bye-lanes, which lead into the main thoroughfares. These lanes are seldom more than four or five feet wide. The only entrance to the village is by one or more gates, the number depending on the size of the village; and the people all live inside except the *Chamars* or other outcaste class, who are not admitted, and have their houses at a little distance apart or round the site, facing outwards.

The gates are the property either of the whole village, or of a subdivision of it (Patti or Thula), each subdivision having in this case its own. The form is the same in all cases. On each side of the roadway, to a distance of 20 or 30 feet, a mud platform 4 or 5 feet in height is raised; and on these are built verandahs closed on three sides, but open with pillars towards the road. The whole is roofed in (the verandahs and the roadway between them) and a very comfortable place of shelter formed,

in which travellers rest and the people meet of an evening. There is sometimes very great elaboration in these gates, and the different Pattis will vie with each other in architectural display. The style of gate is very often a safe test of the condition of a village; but there are few now that have not towards the outside an arch of masonry work, covered with some sort of ornamental design. In a great many villages the gate is a most commodious structure of solid masonry, which would cost in many cases for a single Patti as much as Rs. 1,000; but everything, including labour, is generally subscribed, wood for beams, cow dung for burning lime &c., and the only actual expenditure is on the pay of masons. It is on these gates principally that the architectural genius of the villages shows itself. I have often found shelter from a storm in a village gate amidst a crowd of natives, villagers and travellers, collected with the same object.

The interior of a village is, as a rule, fairly clean; it is *outside* that the filth collects. In the eastern parts the cultivated fields come to within a few yards of the houses, leaving very little vacant space. Round the site is the usual road, and outside of this are generally small hedged enclosures (*wárah* or "*gohárah*") in which the manure heaps are kept, and the women bake the cow dung fuel. These enclosures may lie together in a piece of the "*goerah*," or waste land adjoining the site, or they may be between the fields and the road. Sometimes a proprietor is reluctantly compelled to devote a few square yards of one of his fields to this purpose. The village ponds ("*toba*") are the excavations from which the clay for building the village have been dug out. They are used for purposes of ablution and for watering the cattle. The drinking wells are generally inside the village. If a few "*pipal*" trees about the tank be added, we have a complete statement of the surroundings of an ordinary village of the uplands in Samrála and eastern Ludhiána. These

eastern villages are, as a rule, of average size: but to the west, and especially in the Jagraón tahsil along the Ferozepur border, and in the

Jangal, the villages are much larger, and the houses more spread out, land not being so valuable. Enclosures for cattle and cow-dung fuel are thrown out all round, the lanes are much wider; and there is generally plenty of room round the site. The Mahomedan villages of the Bét are

generally smaller than those of the Dháia, and the sites are more open and straggling. There are no gates, and entrance is possible at almost any

point. The "*takia*" takes the place of the gate in the Dháia. This is situated outside the village, generally under the shade of a "*pilkan*" tree, and consists of a couple of rooms, built on one side of a mud platform three or four feet high. Travellers rest here; and the people of the village meet; and above all the "*hukah*" is kept going. The *takia* is in charge of a *faqir*, whose principal duty is to guard the "*hukah*" and keep it ever alight. A rude mosque is often attached to the *takia*; and, if there is not one, the people pray in the *takia* itself. There is generally

plenty of room round a Bét village, the land adjoining the site being often uncultivated; and the várah, or enclosures, are larger than in the Dháia.

68. The ordinary house of the Dháia (belonging to a Hindu Jat)

Houses: internal arrangement. Hindu Jats.

consists of a "deodhi," or porch, leading out of the lane. On one side of this the cattle are tied and fed at the "khurlis," or troughs made of mud; and on the other are the beds of the inmates; or, if the house is a good one, and there is plenty of room inside, the carts are kept here. The "deodhi" leads into an open courtyard ("sahn" in Hindustani, here called "bera") with the same arrangement as the deodhi, the latter being really used when it rains, and the cattle and men ordinarily preferring the open space. Facing the deodhi across the bera is the dálán or verandah, in front of the rooms (generally two) which are really the house. At one side of the dálán in the "Chounka" or "Rasohi," the place where the food is cooked; and at the other side is a "Koti" or press, which is the store room of the house. The people live principally in the dálán: and the rooms (Kotri) are used for storing grain and all valuables, brass dishes &c., and one for the agricultural implements. This plan can be traced in all the Hindu Jat villages; but, while in some of these in Samrála tahsíl space is so scarce that the "bera" or courtyard is represented by a mere opening a few feet square in the roof, and the whole house is but one room, the deodhi and back rooms having been united, in the Jagráon tahsíl and Jangal villages the houses are very commodious, the courtyard wide, and the dálán backed with four or five rooms. In Samrála the village site cannot be extended, and has to accommodate a much larger number of people than it used to. Many houses will be found to cover a space not more than 10 or 12 feet wide, and about 30 deep; and in this are crowded the family and the cattle. In Jagráon and the Jangal there is nothing to prevent the people spreading out, and they are continually doing so, often themselves keeping to the dwelling-house inside and making a walled enclosure, with a substantial shed for the cattle, outside of the site. I should not omit to mention that in the crowded villages the tops of the houses are much used; and for getting upon them a strong wooden ladder is kept in the lane outside the door, leaning against the wall. Every house has one of these, and the result is to make the passage through some of the villages very awkward for a horseman. The charri and maize stalks kept for fodder are stored on the top of the house.

The Mahomedans' houses in the Bét have no "deodhi," but merely

Mahomedans.

an open court surrounded by walls four or five feet high, into which the Kotri or house opens, generally without a dálán or verandah. The cooking place, called "chuliáni," is roofed separately. On the bank of the river, where there is constant danger of the house being washed away, the people live in huts made completely of thatching ("jhao" or "dib" grass), or four walls of mud have a thatching of this on the top of them.

69. The furniture of the houses is simple, and consists of a few beds, as many low chairs (called "píri") as there are women, spinning wheels ("charkha"), cotton gins ("belna"), and a "chakki" or hand-mill for grinding corn. The women sit on the chairs when spinning &c. The farming implements are all kept in the house. The grain is stored in the "koti," which is a press made of mud against the wall, or in a "bekhári," which is half sunk in the wall. These presses have an opening with a wooden door in the upper part, and things are put in or lifted out of them. The "bharola" is a large cylinder of mud, used for storing grain only, with an opening at the bottom, through which the grain is allowed to run when required. These appliances are made by the women. In many houses wooden boxes will also be found, being used for storing clothes principally, also round ones of leather called "patiár."

70. The cooking and other utensils of the Hindus are almost entirely made of brass, the only ones of earthenware being the water jar (ghara,) and a cooking pot for vegetables (táori). The common dishes are a "prát," or basin, in which the flour is kneaded; a "gadwa" or "lotah" for water; a larger vessel of the same shape called "dolni" in which water or milk is kept for use; "batlohi," a larger vessel, and a "gágar," larger still, made either of iron or of brass; a "tháli," or plate, from which the food is eaten; and a "katora" or shallow cup from which water or milk is drunk. These dishes are all of brass. The bread is cooked on the common táwa or griddle of iron. "Koul" is a small cup of brass; "karehi," a spoon of brass, wood or copper. These with a "chimta," or tongs, for arranging the fire, and a "sandási" or instrument for lifting a lotah off the fire, make up the usual kitchen utensils of the Jat. Taken altogether they represent a good deal of money. The Mahomedans use an earthenware cooking pot, which they call a "hándi." Their other dishes are of earthenware, or of copper tinued amongst the better classes, and have different names from those of the Hindus. They use a "kanáli," or basin for kneading; a "tabákh," or plate for eating out of; a "piála," (Hindu katora) or cup for drinking, made of earthenware. The copper dishes used are a "tháli" or plate, a "katora," a gadwá or lotáh. The "táwa" or griddle is of iron, like that of the Hindus.

71. The dress of the people does not differ materially from that of other Panjáb plain districts. The Hindu Clothing: Hindu Jats, men. Jat generally wears undyed clothes (one can scarcely call them white), made of home-spun cotton stuff. They consist in the simplest form of three articles,—a turban of coarse cloth, a waist cloth (dhoti) and a "chádar" or cloth worn over the shoulders, the last two being made of "khadar" or "dhotar," rather thicker stuff. These, with a pair of shoes made by the village chamár, constitute the simple and inexpensive wardrobe of nine-tenths of the Jat population for the greater part of the year. A

Sikh substitutes drawers ("kach") for the dhoti. On the occasion of a wedding a somewhat better dress is borrowed from a neighbour, who has been extravagant enough to purchase it, and some colour is shown in the "pagri," the white cloth being tied over one coloured yellow ("basanti") or some shade of red (kassumbhi, gulābi, &c.) or green, or both are coloured. The people coming from the Jangal with carts affect these coloured pagris, and the mixtures are often tasteful. In the winter the Jat has a blanket of wool, if he can spare Rs. 2 to buy it; otherwise he has a "dohar" or "chautāhi," a sheet of very thick cotton stuff, double weave. In the latter case his outfit costs about Rs. 3. A well-to-do Jat will have better stuffs, and wear a short tight-fitting waist coat ("kurta") and an "anga" or "angarka," or loose long one over this, and a pair of pajāmahs of country or of English cloth, his turban also being made up of two pieces (a "sāfa" on the top of a "pagri") of superior cloth, often coloured. If he is a "swell," or wants to appear better than his fellows, he will wear a black or coloured coat, made of thick or thin English stuff (broadcloth or alpaca) according to the season; but this is a recent fashion and the garment is called a "coat." Chogas are also worn.

The Jat women wear pajāmahs (called "suthan") made of "susi,"
 Jat women. coloured cotton stuff, and a chadar worn over the head and shoulders, either coloured (young women) or uncoloured, made of gāra or dhotar, thick or thin cloth according to the season. This upper garment when coloured may be of dyed cloth, or of "phulkāri" i.e. worked with silk flowers, or of "silāri," another form of silk work; most women also wear a "kurti" or waist-coat like that of the men. When going to another village, they wear a "ghagra" or petticoat above the trousers, and a "choli" or bodice of coloured cloth.

Of the Mahomedans the Gujar and Araien men wear a waist-cloth
 Mahomedan dress. (called "tahmat") of uncoloured or more commonly of coloured cloth, or a "lungi" (a check or tartan). The pagri is generally white. A lungi is also worn over the shoulders, generally blue and white, or red and white. In the cold weather they wear a "khes" or "chautāhi" of the same sort as the Jats. The women do not wear trousers, but a petticoat, generally of blue cloth, a "kurta," and a shawl, also of blue cloth. The Mahomedan Rājputs dress in much the same way as the Jats, seldom displaying colours. Their women wear "pajāmahs," a "kurta" and a sheet (chadar) of white cloth. A well-to-do Mahomedan Rājput dresses in almost exactly the same way as a Hindu Jat of the same class.

72. Jewelry is called "tagāda" throughout the district, the word
 Jewelry. "zewar" not being known. Amongst Mahomedans men never wear jewelry; and amongst the Jats only three pieces—necklaces made of gold and coral beads strung together ("māhla"), bracelets of gold or of silver ("kangau"), and rings of silver or gold with roughly set stones ("mundi"). The use of

these is confined to such as are better off than the ordinary run ; but a Jat will always borrow a pair of bracelets if he can on the occasion of a marriage. Boys up to 9 or 10 wear some ornament round the neck. Jat women have generally a greater display of jewellery than Mahomedans, because they are fonder of show, and also because their husbands are better off and can afford to give them more. A Jat woman in a well-to-do village will turn out for a wedding covered with ornaments of silver, and here and there a piece of gold. The ornaments commonly worn are the same for all classes except that Mahomedan women will not wear any on their heads. The following is a list of those in general use :—

Where worn.	Name.	Description.	Price.
HEAD.	Chaunk ...	A silver boss worn on the top of the head ...	Rs. 9 to 15
	Phul ... {	A smaller boss of silver, worn one on each side of the head over the ears ... }	1 to 2
BROW.	Bandian ...	A fringe of gold worn across the brow ...	30 to 60
	Tavetrian ... {	Amulets of gold worn hanging over the brow (six) ... }	6 or 7
EAR.	Dandian ...	Earrings and pendants worn in the ears, made of silver.	5
	Bálian with Pipalvatri ...		7 to 9
	Dhedu with chuinke or káuphul ...		12 to 15
	Bála kungri-wala ...		2 to 3
NOSE.	Nath chutki with ... {	Silver nose ring with gold pendant, worn in the side of the nose ... }	20 to 40
	Machli ...	Gold ring for the middle of the nose ...	10 to 15
	Loung ...	A gold stud let into the side of the nose...	1 to 3

Where worn.	Name.	Description.	Price.
NECK.	Tandíra or has...	Necklet of silver	15 to 26
	Máhla ...	Necklace of silver beads	7 to 9
	Hamel ...	Ditto of Rupees joined together ...	15
	Chaukián ...	Ditto of square-pieces of silver ...	10
HAND AND ARMS.	Gokru ...	Silver bracelet	20 to 30
	Kangan ...	Ditto	10 to 15
	Churíau ...	Ditto	20 to 60
	Ponchi ...	Ditto made of strung beads of silver	80 to 100
	Bázuband ...	Armlet	
FEET	Banka, Tore ...	Silver anklets	15 to 20
FIN- GER.	Angustri, ehballi, mundri ...	Finger rings of silver	1 to 2

The workmanship of this jewellery is the roughest descriptions.

73. In the cold weather the food of the common people consists of cakes (*chapátti*) made of joár (millet) or of maize, a mess of "dál" or pottage of moth or másh (pulse), with some green sarson or gram cooked for vegetables ("ság"). With this is drunk "lassi" or butter-milk. In the hot weather bread made of wheat, or of wheat and gram mixed ("bérna") is eaten instead of maize or millet, with dál or pottage of gram. A man working in the fields will eat one small meal, generally the leavings of the previous day, with some "lassi" in the morning after he has been working a few hours, and a heavy meal at noon. This food

is brought to the field by the women or children. If he is tired and hungry in the afternoon, as he generally becomes in the long days of the hot weather, another small meal is taken about 4 or 5, and the day's labour is crowned with a heavy meal by way of supper in his house after dark. An able-bodied man working in the fields all day can eat upwards of a seer of grain made into cakes (if he has nothing else to eat with it), the allowance for each woman and child being $\frac{1}{2}$ seer or less. Vegetables of all sorts, pumpkins, carrots, and radishes, &c., are eaten when in season, and the amount of grain consumed is then less. The Bét people grow and eat "kaddus," "kakris" and radishes, while in the Dháia carrots, radishes and green sarson are the usual form of vegetable. The Dháia people are very fond of a mess of Indian corn meal (álan) and carrots or sarson mixed, the grain being only about one-third of the whole. On the occasion of a marriage or other ceremony superior food is consumed, and a great deal of sugar in some form or other (gur, shakar, khand, &c.)

74. The daily life of the ordinary cultivator is perfectly monotonous, though perhaps not more so than that of any farm labourer at home, rest succeeding toil for most days of the year. A marriage or a fair gives an occasional diversion. The people of the western parts have much more variety and less toil. The youth of the Jagráon and Jangal villages have several games, the principal of which are "sonchi" and "kabadi." In the first of these, which is played throughout the Panjáb, one man runs backward, and two follow and try to catch him, he striking them off with his open hands. Kabadi is described in Forbes' Dictionary; and is a sort of prisoner's base. Wrestling is not common. More intellectual amusement is sometimes found in listening to songs sung by one of the people, or by itinerant singers (mirassies or dhádis), who recite the tales of "Hír Ránjha," "Sassi Punu," or such others to the accompaniment of a fiddle ("sarangi") or a tambourine ("dhad," "dhouru"). But it is only in the rainy season that the ordinary cultivator has time to listen to these, for he is generally much too tired by the evening to think of anything of the sort. Occasionally a body of Nats or Bázigars (strolling acrobats) visit a village, and the people will collect to see the exhibition. But it cannot be said of the agriculturist of the district, Hindu or Mahomedan, that he is fond of any sort of amusement, for his hours of idleness are few and time is never heavy on his hands.

Divisions of the day.

75. The divisions of the day are as follows:—

"Amratvela"	...	...	... Sunrise.
"Cháhvélá, lassivela"	...	...	... Morning.
"Rotivela"	...	...	... 10 to 12 o'clock.
"Dopahr"	...	...	... Noon.

"Dindhala" }	...	...	...	Afternoon.
"Tijapahr" }				
"Loudévéla" }				
"Athar" }	...	...	...	Evening.
"Takála" }				
"Dhandulkán"	...	...	...	Dusk.
"Rát"	...	...	...	Night.

An account of the months will be found in the chapter on agriculture.

76. The ceremonies observed on the birth of a child by the Hindu portion of the agricultural population are as follows: When the midwife is called in, she ties a branch of the siris tree, and an iron ring over the door to notify the birth, and also to keep away evil spirits. If a son is born, the father goes at once and informs the páda or priest, and inquires whether the time is auspicious or not. If it is not, the father must make offerings to the Brahmins. In cases of the worst combination of stars, called "gand mul," the child in former times was thrown out to perish, as it was believed that both parents would die if they kept it. The mother is kept close in the house for 13 days after the birth, when the páda is called and gives a name to the child, on which occasion he receives Re. 1, and the Parohit and others something. Brahmins, faqirs and the neighbours are also fed: and sweetmeats distributed, considerable expense being incurred. This is in token of the purification, that the "Sutak" or impurity is removed from the house. For a further period up to 40 days the mother does not mix with the rest of the people, only with her relations. None of these ceremonials are observed by the Jats in the case of a girl, except that "Sutak" is kept. A Hindu child has no further ceremony by way of baptism &c. to go through. A Sikh generally takes the "pahul" when he has arrived at years of discretion. The whole of these ceremonies are not strictly observed by the agricultural portion of the community. The name is given to a son in the case of a Sikh by opening the "Granth Sáhib" and taking the first letter of the page. Other Hindu Jats do not as a rule ask the Brahmin "páda" for a name; but give one themselves or ask the "Bharaie." The period of 40 days seclusion (called "chilla") is not kept unless for some special reason. Amongst the Mahomedans when a son is born the Qázi or Mullah (priest) comes on the first to the third day and recites the "Kalama"† or creed in the child's ear, and it receives a name from the priest or from some respectable relative. The mother is impure for 9 days to the members of the household, and for 40 days to the rest of the world. The termination of this period of 40 days is celebrated by a feast ("Aqíqa"). Circumcision ("Khatna") is performed by the Naie when the Mullah indicates the proper time, but no age is fixed. The boy is generally 4 or 5, but may be 10 or 15; and

* I have condensed into the next few paras such information as is essential regarding the customs prevailing amongst the agricultural population in connection with birth, marriage and death. For further details I would refer to the separate account of the customs of the District.

† It is the "báng" or call to prayer that is recited, not the "Kalama."

if he has grown up he is generally drugged with "bhang" to deaden the pain of the operation. The Naie is paid, and a small feast given to the relations, who contribute something by way of "tambol." In the case of a girl, the days of impurity are observed, but the name is given by any one. The Rájputs generally spend more than the Gujars and Araiens on the "aqíqa" and circumcision.

77. The next ceremony in the life of the child is the betrothal.

Betrothal: Hindu Jats: There are now amongst the Hindu Jats two forms of betrothal, where money is taken by "Pun" betrothals and for consideration; price of girls. the girl's people, and where it is not ("pun"). The latter is the only pure form. The girl's parents generally make inquiries beforehand and fix on some family with whom they should like an alliance, and in which there is a boy suitable, the only restriction being that the family does not belong to four "gots," with which the parents are already connected (see the account of customs). The Naie or Brahmin of the family (lági) is sent to the house selected and makes the proposal. If it is accepted, he returns in a few days with money and sugar which he has received from the other family. The father of the boy calls the neighbours, and the "lági" is seated on a high place with the others all round him by way of doing him honour. The parohit or páda of the family makes the boy say some prayers, and then the "lági" puts a mark on the brow of the boy ("tilak"), and gives him the money and sugar into his lap. This completes the betrothal. It is said that before annexation taking a consideration for girls was unknown, because the rulers would not permit it; and it is still forbidden in the Nábhá state. But now the custom is almost universal, although the transaction is still kept secret, and is never admitted; and only a few of the better families abstain from it. Indeed a Jat considers the birth of a daughter a piece of luck, for the ordinary price has in recent years run up very high. No wonder that marriage is now considered a luxury, and one wife enough for a whole family. I have already expressed a belief that polyandry is common in practice, and the manner in which the brother claims "karewa" on the decease of the nominal husband supports this. The girl is considered as purchased by the family, who can seldom afford to pay so large a sum as her price twice over. In the case of a betrothal for consideration the parents of the child accompany the "lági" and a bargain is struck. Part of the price is paid, and the lági performs the usual ceremonies. Betrothals among the common Jats take place now-a-days when the girl is 10, 12 or even older, for the longer she is kept the higher price she will fetch. Boys are kept till 18 or 20, because their parents cannot collect enough money to pay for a girl.

78. Marriage under the circumstances generally follows soon

after betrothal. If the betrothal is "pun," Marriage. the girl is married at about 9 years of age: otherwise when the money agreed on has been paid. The pádas of both parties are consulted and a date fixed. The bridegroom and

a few relations go as a marriage party (*barát*) to the bride's house, and the marriage ceremony is performed.

The ceremonies attending marriage are as follows: A place is marked off (called "*bedi*") with four upright stakes joined with cross-pieces of wood at the top, and inside of this the pair are seated with the Brahmin who celebrates the marriage; and a small fire is lit and kept up with "*ghi*." The Brahmin marks off on the ground with flour what is called a "*chauk*," a square divided into compartments each representing some deity, and worships this in the name of the bride and bridegroom. When the prayers have been said, the marriage "*mantar*" or charm is repeated; and the pair walk round the fire and "*chauk*" (ceremony called "*phera*") four times, the women of the spectators singing and the Brahmin repeating his "*mantars*." This completes the ceremony; and the bride and bridegroom return to the home of the latter. The bride spends a few days there, and then goes back to her parents, with whom she resides till she is finally made over to her husband two or three years after (*mukláwa*). There is almost no expense over an ordinary wedding; but where the parents are very well-to-do there is a large marriage party, and all the people are entertained at the bride's house, a good deal of money being spent on dancing girls, fireworks &c., besides. It is also the custom in good families to give with the daughter a dower of cash, jewelry, &c.,* and, as it is coming to be considered a sign of social rank to be able to do so instead of taking money for her, it is likely that the custom will spread.

All the clans of Jats practise *karewa* or widow-marriage. The proceedings on this occasion are very simple. The neighbours are called, including the *Lambardárs* or respectable members of the village community, as witnesses of the ceremony. The Brahmin says a few "*mantars*," making a "*chauk*" as in a first marriage, and ties the clothes of the parties together. The man then puts a sheet over the woman's head and she becomes his wife. There is no "*phera*," or walking round. More will be said on this subject later when I notice the tribal codes; but I may observe here that there is an increasing amount of laxity in the matter of these second marriages, and people live together as man and wife without going through any ceremony. Such conduct is punished by a heavy fine under native rule.

79. Amongst Mahomedans it is the custom for the parents of the boy to go to the house of the girl selected and make the proposal. If it is accepted Re. 1 and 11 seers (*katcha*) of sugar, and some clothes are given to the girl, and also ornaments. The priest (*Mullah*) is called, and the girl's father declares the betrothal. The boy's father is given in return a "*pagri*" and "*khes*," and is well fed and sent

*Called "*dabez*" or "*dáz*."

away. The marriage may take place at any time except in the months of Ramzán, Moharram, Shalbán. The Naie of the girl is sent with some clothes to the boy's house and announces the date. The boy and his friends go on the appointed day to the girl's house in a marriage party, and the ceremony is performed by the Mullah; and the dower is fixed at the time of the ceremony. The "Jahéz" or marriage portion given with the girl by her parents varies according to their means, and consists of clothes, jewelry &c., sometimes cattle. As with the Hindus the girl spends a day or two in her husband's house, and then returns to her parents till she is finally made over ("mukláwa") to her husband.

80. It is not necessary that I should give in detail the ceremonies and rites attending the death of a Hindu. These are observed by the Jats more or less fully; the body is burned and the "phul" or "ast," i.e. the partially consumed bones of the hands &c., collected and sent to the Ganges in charge of a Brahmin, who receives a small fee in addition to his expenses, and also takes 8 annas or Re. 1 to the "tírath parohit," or Brahmin on the spot, who in return for this throws the bones into the Ganges, and notifies this fact to the relative by letter. The other relatives of the deceased go about their work after three days mourning; but the son or other relation whose duty it is to perform the obsequies is shaved and maintains the "pátak" or period of purification for eleven days (Hindu Jats). After seventeen days the mourning is over, and the chief mourner celebrates this by a feast to the relations and to the Brahmins, the event being called a "hangámah." Large sums are sometimes spent on this occasion. Like other Hindus the Jats keep the "kinágat" or "sarád;" and on the day that corresponds with that of the decease of the relation whose obsequies he has to perform, the chief mourner gives food to the Brahmins before he or his family eat it.

Amongst the Mahomedans the ceremonies are simpler. The body is buried with the service enjoined in the Mahomedans. Qorán. On the third day and again on the 40th the chief mourner distributes alms ("khairait"); and on the first of these occasions prayers are offered for the deceased.

81. I have in the earlier parts of this chapter considered the character and disposition of the various tribes which compose the rural population of the district; and I hope I have made it plain that the mass of the people are quiet, contented and law-abiding. The exceptions are the Gujars, perhaps the Rájputs, the criminal tribes of Háris &c.; and to these I may add the rabble of the towns. The Gujars are from of old turbulent, and a large proportion of them either actually engaged in crime or on the side of the criminals; but there are at present many respectable men of the tribe. The Rájputs

do not go beyond grumbling. The Hárnis, Baorias and other professional criminal classes are not showing many signs of regeneration under our rule ; and to their account a great deal of the crime of the district must be set down. Even with them the amount of crime is not more than normal ; and the district will compare favourably with most in the province.

There is a daily increasing love for litigation, which is most strongly developed amongst the Jats. The most petty cases are fought out to the bitter end, and both parties freely use suborned witnesses to support their claims. The ordinarily honest peasant appears quite to change his character when he comes into our courts ; but this is perhaps not to be mentioned as a feature peculiar to this district. The use of spirits and drugs is very uncommon amongst the agriculturists, who are a most frugal people. The Garéwál Jats used to have a reputation for using opium and "pest" ; but the custom is disappearing with the last generation. The other Jats and the Bét people appear to be free from vices of this sort, except that the latter indulge to excess in smoking tobacco. In the towns the Suds and some of the lower classes from down country consume a great deal of spirits ; but the ordinary Hindu and Mahomedan still considers it a sin to do so.

82. If we are to judge by the standard of other parts of the Province I should say that the state of the agricultural population was one of very considerable comfort. They are a simple people, and have few wants. Their food is good, and they have enough of it ; and they are according to Indian ideas well clothed and well housed ; while their fine physique plainly shows that they do not suffer much from deficiency of nourishment, or from exposure to the elements. Amongst the lower menials in the villages (chamárs), and the classes in the towns which subsist by labour (notably the colony of weavers in the city of Ludhiána) there is at times a good deal of privation. The chamárs have fixed allowances of grain which are assured to them ; but the other classes mentioned receive a cash wage, which is very low, and are sufficiently fed only when grain is cheap. Amongst agriculturists the Mahomedans as a rule are improvident, and live a hand-to-mouth existence ; but their possession of the moist lowlands is an insurance against complete failure of the food-supply. The Gujars and Rájputs generally have dealings with the money-lender, and pay him in kind ; and this makes it impossible for them to keep stores of grain. Their credit is good, and they can unfortunately raise money whenever they require it on the security of the land ; so that they never want for anything. An ordinary house in the Bét is comfortable, but will not be found to contain much of value in the way of jewelry or dishes. The cattle used for agriculture are very inferior ;

but the milch kine are good, as there is plenty of grazing ground ; and the principal wealth, at all events of the Gujars, consists of their buffalo cows. The Araiens and Awáns mostly get on without incurring debt ; and I believe that the number of Gujars and Rájputs who do so is daily increasing. There is also a fair proportion of men of all these classes who are able to advance money on the security of land. I have already referred to the Awáns as keeping carts that work for hire, and some Rájputs have followed their example. The villages of the Ludhiána Bét derive great profit from the proximity of the city, in which there is a ready market for the sale of all sorts of miscellaneous produce. Although the money-lenders may seize on the grain, the straw is left ; and in a year of drought this fetches a very high price, the people being able to sell it, and depend on the grass along the river and Budha Nála for the food of their cattle. At the present time (September 1883) straw is very dear ; and there is a constant demand for it on the part of the Jangal people. Many villages have sold Rs. 400 or 500 worth within the last few days.

The Hindu Jat is by nature provident. His house will generally be found to contain valuable property in the way of dishes, jewelry and clothes, besides a sum in hard cash. In the eastern parts the most valuable crops are the cane and maize ; and these must be turned into cash soon after the harvest. But even here there is generally enough grain in store to last for a year. In the western villages (Jagraón and Pakhowál) the condition of the Jats is more than one of mere comfort. The houses are superior, there is a great display of jewelry and brass dishes, and the cattle are of a very high class. Almost every house contains a supply of hard cash ; and the rabi grain of two years (the kharíf does not keep well, and is not stored) is generally kept till the third harvest is secure. A common sign of wealth in a Jat is some masonry work about his house ; either an archway, or the whole porch, or even the whole house is built of burnt bricks. Masonry work is more common in the west than in the eastern parts ; but most villages have some houses of it. "Havelis" or mansions belonging to Jats who have made money in service or by trade are springing up in many villages. I have elsewhere given an account of the manner in which the Jats have monopolized the carrying trade. They are able to take up the greater part of the land that is mortgaged ; and would have it all, but that there appears sometimes to be a foolish prejudice against a man mortgaging to his "sharik" or co-sharer, the idea of which appears to be that a man's indebtedness is not likely to be known, and he cannot be twitted with it, if his creditor is of the banking class. I need not do more than allude to the large fortunes made in trade by the mercantile classes in Ludhiána and the other towns.

This state of comfort and prosperity is entirely the growth of recent years. Under the Sikhs the cultivator had little room for saving left ; and there was no opening for trade or for remunerative

investment of any sort. The prices of agricultural produce were low ; and it was not till twenty or twenty-five years ago that the improvement of communications raised them, and brought a great deal of wealth into the district. This subject of prices is dealt with in Part II of this report, and it will be seen from what is written there that the great rise took place about twenty years ago and that the average has remained very high ever since. The increase of wealth of the agriculturist has been accompanied by a good deal of extravagance, shown in expenditure on marriage and other celebrations ; and the sums commonly spent in this way are double or treble what they were thirty years ago. I have already alluded to the large sums paid for girls. The Jats of the eastern parts do not waste much money on such occasions beyond the actual price, but those of the west spend very large amounts on the celebration, and so do the Rájputs. To an ordinary cultivator in the Jangal or Jagráon villages a marriage in his family often means the expenditure of Rs. 500 to 1,000, even up to Rs. 1,500, and smaller sums go in "hangámahs" or funeral feasts.

83. The language of the district is Panjábí in, I should say, a very pure form. There are no peculiarities of grammar ; but the names of many things are as usual peculiar to the part of the country. The glossary appended to this report, and the illustrative songs, sayings &c., which I have collected may give some idea of the every-day language of the people. As to the characters in use the shop-keeper's books are made out in the usual "Lande," illegible save to the writer. A few of the very well-to-do Hindu Jats keep accounts in Gurmukhi. The Nágrí character is used by the Brahmíns for religious purposes. In the towns the improved "Lande," known as Ashráfe, is used by the trading classes. The Persian character is nowhere used by the people for purposes of business.

84. The returns of the Census show that of the total population (618,835) 21,920, or 33 in 1,000 either can read and write or are under instruction, only 552 of this number being females, while one-third belong to the towns. Of the rural population 14,530, or 26 in 1,000, can read and write or are under instruction, and most of these may be taken as belonging to the shop-keeping class, although there are no details to show the proportions in which the various characters are used. Some of the rising generation of agriculturists have received instruction in our schools, and some of the older men who have business transactions keep, as I have said, account books in Gurmukhi ; but it may be affirmed that learning is still confined to the official and trading classes. At the same time the district is not backward in comparison with the average of the province. The agricultural population has not as yet come to regard a course of instruction as more than a preparation for Government service, and it is only entered on with this object.

The number of those at present under instruction is by the census tables 4,962 in the whole district; but the educational returns show 4,235 attending Government or aided schools; and to this might be added 4,345 in the private village schools (of which I will give an account hereafter), making a total of 8,580. The following statement will show the details of the first of these items, and of the institutions where they attend:—

HIGH SCHOOL (GOVERNMENT)		MISSION SCHOOL AT LUDHIANA (AIDED).		DISTRICT GOVERNMENT SCHOOLS.						HINDU SCHOOL AT LUDHIANA (AIDED).	
				MIDDLE.		PRIMARY.		FEMALE.			
No.	Attendance.	No.	Attendance.	No.	Attendance.	No.	Attendance.	No.	Attendance.	No.	Attendance.
1	400	1	527	10	294	49	2,513	17	388	1	123

A return prepared recently shows 396 indigenous schools with an attendance of 4,345. These institutions are in Mahomedan villages under the charge of a "Mullah" or priest, who gives instruction in the Qoran to a class of eight or ten pupils seated in the village mosque or takia. The school is called a "maqtab." The boys merely learn by rote from the master two or three chapters; but to this is sometimes added a little writing on a slate, and portions of some easy Urdu book ("Karîma," "Khâliqbârî" &c.), and it is only in this case perhaps that the institution can rightly be called a school. The Mullah, who is also the village priest, has generally a small piece of land given him, or receives an allowance of grain, and also presents at odd times. "Lande" is taught to boys of the shop-keeping class in the villages by a "pâda" or master. The boys learn to write on a slate, there being of course no books, as the character is purely commercial. Fees are paid by the parents, Re. 1 when the boy enters; another rupee when he can write the letters, and so on. Gurmukhi is taught in the Dharmasâlas by the Sâdh (*see* para. 65), who is probably in possession of an endowment, and also receives presents from the parents. The instruction here too is by slates, the boy first learning to form the letters and then to write from dictation. An advanced boy will sometimes begin to read the "granth," but the use of books has not yet been introduced. These schools are, it will be seen, of the most elementary character. The following statement will show the number of each sort in the district:—

MAHOMEDAN INSTITUTIONS				HINDU AND SIKH.									
IN WHICH ONLY QORAN IS TAUGHT.		IN WHICH OTHER INSTRUCTION IS GIVEN.		LANDE.		GURMU-KHI.		SHASTRI (NAGRI).		SANSKRIT.		PERSIAN.	
Schools.	Boys.	Schools.	Boys.	Schools.	Boys.	Schools.	Boys.	Schools.	Boys.	Schools.	Boys.	Schools.	Boys.
131	1,401	62	807	20	567	141	1,410	36	351	5	173	1	2

The Mahomedan attendance includes 259 girls. It is likely that many of the pupils in this return would not appear in the census tables as "under instruction." For example, those learning portions of the Qoran could scarcely be so designated.

D.—Village Communities.

85. As an Appendix (No. 7) to this report will be found a statement of the forms of village tenures in the district according to the accepted definition of the terms *zemdári*, *bhaiachára* and *pattidári*. But little information as to the real constitution of the villages is to be derived from this classification, if indeed it is not distinctly misleading. In the form of statement (see also paras. 103 and 104 of the "Directions to Settlement Officers," Barkley's Edition) I read that a *bhaiachára* village is one "in which possession is the measure of right in all lands," but I believe that for *right* we ought to read *liability*; and that the distinction comes to be a mere question of the manner in which the assessment is distributed for the time being amongst the sharers. This makes a very material difference, for in numbers of villages, although the shares have become obsolete to this extent that they are not used for distributing the assessment, the village common land and the receipts from it are still divided according to them (as noticed in para. 112 of the Directions). Again, almost every village has got some area, however small, of common land, in the receipts of which the community participate; and this fact makes the tenure "imperfect."

The purest form of the village community is that in which the proprietors are or keep up the fiction of being descended from a common ancestor; and of this type there are only a few villages in the district, belonging mostly to *Rájputs*. I have explained in para. 50 the manner in which most of the *Jat* villages were founded by several families, which generally belonged to different "Gots" or

subdivisions. The land was in the first instance divided according to shares (called "hal" or plough), a number of these being assigned to each family according to its strength. The "hal" differed according to locality, but was as much as it was estimated that a pair of oxen could plough. Under native rule revenue was realized in kind or by cash on the area of certain crops; but the people retained these customary shares and used them in the distribution of common receipts and in payment of fines, cesses, &c. The subject will be more fully discussed in the second part of this report; but I may state the result generally to be that under our rule, owing to improvements in the land, transfers, &c., the shares have been generally abandoned as a measure of liability for Government revenue, but retained as a measure of right in the village common property and of liability for casual demands (*e.g.*, "malbah.") The native states around (Patiāla, Jhīnd, Nābha and Maler Kotla) have followed our example and substituted a cash demand for revenue taken in kind; but it is everywhere distributed on the shares (halsāri.) It is only in the Bēt and in a very few Dhāiā villages of this district that the people have of their own free will adhered to the shares under our rule. There is no village that I know of in which the land was originally occupied piecemeal without a formal division according to shares. The original distribution is generally most elaborate, the whole area having been divided into blocks according to quality, and each sharer getting his portion in each block. Sometimes the land of each subdivision is separate, and there is then this same arrangement amongst the sharers inside of it. I should say, then, that the villages were all pattidāri (or zemindāri) in their origin; but that in most the shares had fallen out of use for purposes of defining the liabilities of the sharers.

The subdivisions of villages are *tarafs* in some of the larger villages, *pattis* in most; and inside of these *thulas*. The proprietors of a thula are generally of the same Got, and often the descendants of a common ancestor. Each thula will be found divided into ploughs (hal), which may be either "packa" or "katcha," the former representing the original distribution of land, and the latter subsequent partitions; but the size of the plough now merely depends on the number of sharers in the subdivision, and it may or may not be the same for the whole village. Thus the land of a village may be divided equally between two pattis, and subdivided inside one into 20 and inside the other into 25 ploughs.

In most villages there are lands held by persons who are not members of the village community (mālīkan kabza). These lands have generally been assigned from the village common as endowments to some holy man (*see* para. 65).

86. The Government village officers are the usual ones, the lambardār or headman and the patwāri or accountant, paid by a cess at the rates of Rs. 5 and Rs. 3-2 per cent. on the Government

Village officers and servants.

revenue, and the chowkidár paid Rs. 3 per mensem which is raised by a collection on houses. The appointment of zaildárs, to be paid by a deduction of 1 per cent. from the Government revenue, has been sanctioned; and also some annual allowances of Rs. 20 to 30 (here called "posháki") to selected lambardárs.

The total number of lambardárs is 2,747, and the average remuneration per annum Rs. 20. Previously to the regular settlement the lambardárs were a strong body, well paid and selected as really leading members of the agricultural class; but in the inquiry which was then made their number was more than doubled. Even yet the pay is generally very fair in the Dhaia, but in many Bét villages lambardárs receive as little as Rs. 2 to 3 a year; and the law does not permit of the number being reduced in any village without the consent of the proprietors to be represented. There is very little to distinguish most lambardárs from the rest of the proprietary body. Not one in a hundred keeps a horse or pony; and their sole idea of duty to Government is that they must realize the revenue and their own allowance. In fact till recently the first of these was relegated to the patwári, who regularly accompanied the lambardárs when taking the money to the tahsil in case that it might be misappropriated. It is, perhaps, a sign of progress that the authority of the lambardárs, such as it was, is daily diminishing; but a further weakening is likely to lead to much administrative inconvenience. In many villages the sharers, though perfectly able to pay their revenue, neglect to do so, well knowing that the lambardár will get into trouble; and the latter has at best a very clumsy remedy against defaulters.

The "Kharpanch" deserves mention as a growth of our system. He is a sharer who has acquired a reputation for cleverness and for knowing law; and has probably sharpened his wits by hanging about our courts. He is invariably in opposition to the lambardárs and to Government; but his advice is taken on all matters by individuals or by the whole community. Any one wishing to institute a case consults him; and he is always ready to suggest to a sharer some cause of quarrel with his neighbour. The "Kharpanch" is in fact the village mischief-maker, and everybody's business is his.

The "tolah" or "modi" corresponds to the "dharwáie" of the Mán-jha country. Under Sikh rule and until very recently he was the patwári in addition to his other numerous vocations. Besides his private business of shopkeeper he managed the "malbah" or village fund, and made out what were accepted as patwáris' annual papers for Government. Some account of the present patwáris and their attainments, will be found in the second part of this report.

Patwáris.

The village menials will find a more suitable place in the chapter on Agriculture, as their tasks are a part of it.

87. In every village there is a common fund ("malbah") managed by the lambardárs. There were formerly various sources from which money came into this :—

(1.) Receipts for sale of produce of the common land, and rents paid for cultivation of it.

(2.) "*Atráfi*," or a cess levied on the houses of the artizans, and sometimes of the shopkeepers, at the rate generally of Re. 1 per annum on each shop or house.

(3.) "*Dharat*" or "*tulai*." Whenever grain was sold in the village it was weighed by the "*tolah*," who charged at a certain rate on each transaction, and credited a portion of these receipts to the village fund.

(4.) There has always been a good deal of expenditure from the common fund, principally on feeding faqírs and other holy men; and, as this generally exceeds the receipts, a collection has to be made from the sharers. The second and third sources of income have survived in only a few villages; and with the spread of cultivation the first does not remain in many. In the eastern villages the funds are invariably raised in the following way: the lambardárs have the power of incurring expenditure as necessary, getting the money from some appointed shop, and the account is made up once or twice a year, the sharers being entitled to have it explained to them. The amount spent is then collected by a "*bách*" or contribution from the sharers. In some villages the proprietors have allowed the lambardárs to realize a small percentage on the land revenue for this purpose, and the latter are then responsible for the whole expenditure. In a few villages to the west (Jagrón and Pakhowál) *atráfi* is still realized; but the proprietors generally prefer to divide the receipts, keeping the public account separate in the manner described above. When considerable sums are now and again realized by the sale of wood on the common land this same course is followed. In the Jangal villages, the whole village expenses are paid by Dharat, or fees on sales of grain, the transactions in those parts being much more considerable than in the eastern villages. Disputes about the village fund are constant, and the endeavour is everywhere to deprive the lambardárs of the power to spend money for any purpose. The sharers are usually put up by some knowing one to question this right, and the management of the common fund becomes a standing cause of quarrel.

E.—Leading Families of the District.

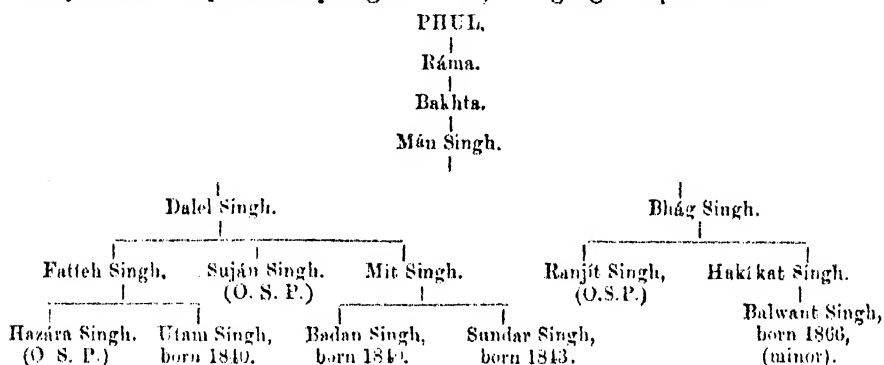
88. At pages 253 to 272 of Griffin's Panjáb Rájas will be found an account of the Bhadour Chiefship, and of the manner in which the Patiala claims over it were rejected on their merits in 1855. The

Phulkian Families: Bhadour chief.

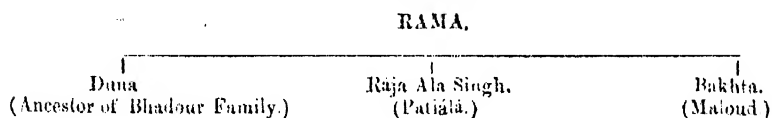
estate was a portion of this and of the Ferozepur districts, the villages of this being in the Pakhowál tahsíl till the year 1858, when the whole was transferred to Patiála, the supremacy being allowed by favour of the British Government and not by right. It is not necessary under these circumstances that I should do more than mention this family. Sardár Atar Singh resides principally at Ludhiána, where he has built a magnificent house, and has opened a public library. His services in the cause of learning are too well known to require to be noticed here; and he has acquired a great amount of local influence.

The leading family of the district is that of Maloud, a branch of the Phulkian stock, of whom mention will also be found at pages 273—276 of the "Rájas."

I may as well repeat the pedigree here, bringing it up to date.



The sons of Ráma who founded families were in order of seniority:



Ala Singh and Bakhta left Bhadour (which had been founded by Ráma) to Duna as the eldest brother, and went to seek their fortunes elsewhere about the year A.D. 1720. Bakhta settled a few miles east of Bhadour in the village of Dhapáli, where he had connections, till he was called by a Jat of the name of Sahna, who had attempted to found the village which still bears his name, but was pressed by the neighbouring villagers. Bakhta built a rude fort which was called Kot Bakhta, and made this his head-quarters; but the name of Sahna has stuck to the village, which still has a large fort belonging to the family. Mán Singh, the son of Bakhta, conquered the Maloud ilaqa from the Maler Kotla Afgháns about the year 1750 A.D. This was the period of activity of the Cis-Satléj Sikhs against the Mahomedans which culminated in the fall of Sirhind in 1863. Mán Singh died leaving an extensive estate to his two sons, Dald Singh and Bhág Singh, who quarrelled about the division of this, and the dispute was referred to Sardár Chuhar Singh of Bhadour.

The decision then given has established the rule of succession in the family. The elder son got two-thirds, and the younger one-third; and it is according to these proportions that all subsequent distributions of the *jágir* have been made within the various branches. There have never as yet been more than two sons to succeed in any branch. The Maloud family maintained a position of independence, the relationship to the Patiala Rájas giving it immunity from the attacks of its neighbours. It came under our protection with the other Cis-Satléj Chiefs at the beginning of the century. When the Ludhiána district was formed out of the territories annexed in 1846 the Maloud estates were included in it; but the *jágir* was maintained in its entirety, as the family had not been compromised in the struggle of 1845. The *jágirdars* were allowed to continue collections from the cultivators till 1850, when a cash assessment was fixed for the villages of the *jágir*. The family, like all other Cis-Satléj chiefs, except the six treated as independent, was deprived of all powers (*see* para. 34); and its local influence may be said to have almost ceased, for the Jats, who make up the population of the villages, have little respect for any one who cannot display authority over them. In 1860 the representatives of the three main branches were invested with magisterial powers, to be exercised within the local limits of their *jágirs*; and this measure has done much to resuscitate the influence of the family, and has placed it in a much better position with regard to the people, who up to 1846 were as much its subjects as the villages of the Patiala state now are of the Máharája. The value of the *jágir*, as recently assessed, is Rs. 85,077, and it is thus distributed between the four members of the family:—

(1).	Sardár Utam Singh	...	...	43,136
(2).	Do. Badan Singh	...	...	15,782
(3).	Do. Sundar Singh	...	...	7,792
(4).	Do. Balwant Singh	...	...	18,367

The family, besides enjoying these revenues, also owns a good deal of "Bir," or land reserved by the chief for grazing, fire-wood, hunting &c., as well as all holdings of such proprietors as absconded on the introduction of a cash assessment or subsequently. Some of the Birs are of considerable extent, and are still covered with a growth of wood. The villages of the *jágir* were distributed between the other sardárs before annexation; and in 1878 between Sardár Badan Singh and Sardár Sundar Singh.

(1). Sardár Utam Singh, the head of the family, lives in Rámgarh (near Maloud), where there is a large fort built by his father, Sardár Fattéh Singh. He has also the fine old fort at Sahna, built by Chaudri Bakhta; but this he seldom visits. Sardár Utam Singh has the powers of a magistrate of the second class, and civil powers in cases up to Rs. 300 value.

(2 & 3). Sardar Mit Singh had two forts, a very large one at Maloud, and a smaller one at Pakhoke. The former was assigned

to Sardār Badan Singh, who resides in it, and exercises the same criminal and civil powers over the whole estate belonging to his branch as Sardār Badan Singh does in his share. Sardār Mit Singh lent his best assistance in the mutiny, supplying horsemen and footmen to the extent of his ability. For this he was rewarded by the perpetual remission of half of his commutation money; and, while the other branches pay two annas in the rupee of their revenue, his descendants have to pay only one anna. Sardār Sundar Singh resides at Pakhoke.

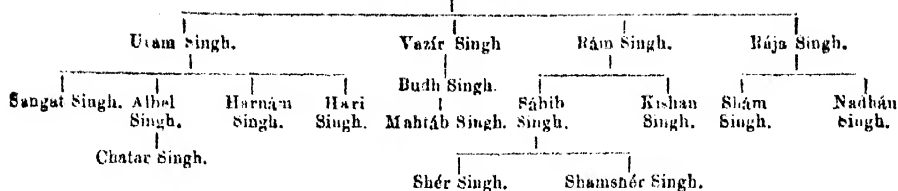
(4). Sardār Hakikat Singh died in 1875, and the estate has since been under the management of the Court of Wards, his son, Sardār Balwant Singh, being at the Wards' School, Amballa, a young gentleman of 16 or 17 years.

89. The next jágir in importance to Maloud is that of Ladhrañ.

Family of Ladhrañ.

The ancestor of this family, Jai Singh, was a Gurm Jat of Karanke Dhirke near Atári in the Amritsar district. He was a member of the Nishánawálá confederacy; and in the scramble for territory which followed the capture of Sirhind in 1763 A.D. secured a piece of country lying between Ludhiána and Samrála with 27 villages, and seven others in the Kharar tahsil of Amballa. Jai Singh gave his brother, Nahr Singh, one of the former villages, Palmazra, which the descendants of the latter still hold. Jai Singh had two sons, Chart Singh and Kharak Singh, the latter of whom was a noted robber, and was allowed by his brother one village, Ránwan, which still belongs to his descendants. The rest of the territory went to Chart Singh, who in A.D. 1809 accepted British protection. There was a dispute with Patiála as to the Kharar villages, which ended in the Ladhrañ family getting four out of seven. The territory in Ludhiána was small; and the relations between the family and the Nábha state appear to have been rather doubtful. At pages 392-394 of the Panjáb Rájas will be found an account of the claim to supremacy set up by Nábha, and the decision of the Government of India on it. Although the Ladhrañ Sardárs, like others of the Nishánawálá group, were at times in actual opposition to Nábha, there can be no doubt that they gradually became to some extent dependant on that state. After the campaign of 1845-46 the Ladhrañ territory passed into our hands, and was included in the Ludhiána district, the jágir having maintained to the family. The descendants of Chart Singh are very numerous; and the jágir, which is worth Rs. 24,000 in all, is becoming more and more subdivided. One or two of the family have taken to service, Sardárs Hari Singh and Albél Singh being Rissáldárs in the 12th and 13th Bengal Cavalry respectively; but most of them prefer to eat the bread of idleness. It is likely that in another generation or two the shares held by many members of the family will be insufficient for their maintenance. The pedigree of Chart Singh's descendants now alive is as follows :—

CHART SINGH.



The rule of succession is "Chundavand," *i.e.*, the estate is partitioned according to the number of wives of the deceased, the children of each wife dividing a share between them equally. Mahtáb Singh, Shám Singh and Nabhán Singh have still very fair incomes. The family also own landed property, one whole village and shares in several more, and some very fine houses at Ladhran where they all reside.

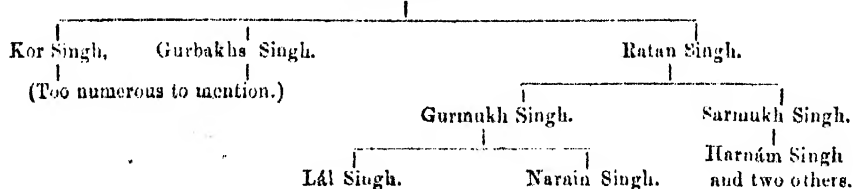
90. Other existing jágirs in the Samrála tahsíl are : (1) *Kotla Badla*. The founder of this family was Rai

Other jágira in Samrála tahsíl : Kotla Badla.

Singh, who came from the Amritsar district in Sambat 1916; and on the fall of Sirhind secured four villages, Badla, Kotla Badla, Bhari and Saidpur. The

family, like others of this tahsíl, maintained its independence in the midst of its more powerful neighbours; but it is probable that all of them would eventually have been absorbed by the Phulkian Chiefs or by Lahore but for our interference. The villages came to us when the rest of the country was annexed in 1846. The pedigree of the family is as follows :—

RAM SING.



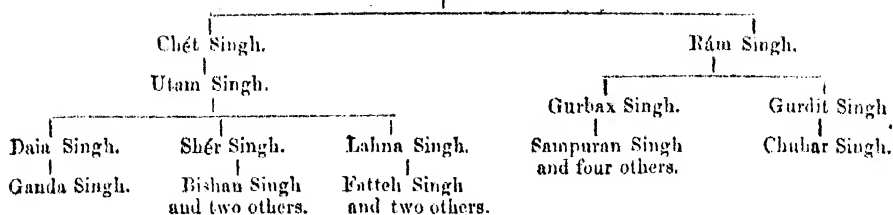
The descendants of Kor Singh and Gurbakhs Singh hold Badla and Kotla Badla; but they are too numerous to mention. The other branch is much better off; and Lál Singh is a man of some means, and has a good deal of influence. The whole jágir is only worth Rs. 7,611 per annum.

(2.) *Jabu Mazra*.—The founders of this family were Rái Singh and Rám Singh, Jats (Kang), from Amritsar.

Jabu Mazra.

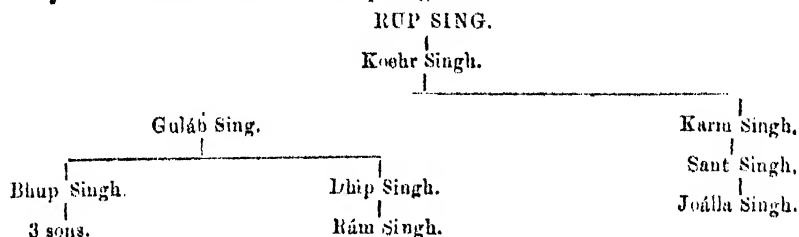
About A.D. 1763 they secured 16 villages to the south-west of Khannah; but were exposed to constant attacks from Patiála and the Kapurthala chiefs, who finally annexed and divided the whole estate. The sardárs complained to the Resident at Amballa, and eight villages were restored to the family. These they now hold with a revenue of Rs. 10,722. The pedigree is—

RAI SINGH.



There are two branches—one (Rám Singh's) residing at Jabu Mazra; and the other (Chét Singh's) at Dhíru Mazra. There is little to distinguish these men from the Jats around them except their extravagance, and not one of them is in service. Gauda Singh and Chubar Singh are the heads of the families at present.

(3.) *Kotla Ajner*.—This is a *jágir* of four villages acquired by the ancestor of the present holders, a Mánjha Jat, subject to the Ahlawália Chief. The lands came to us by annexation with the other Kapurthala territory in 1846; and the *jágir* was confirmed to the family, half to be held in perpetuity. The revenue is Rs. 4,132, of which the members of the family now receive half. The pedigree is—



This family is of no importance at all; and none of the members are in service. Other *jágirs* of less note are :—

Nishánwálá; holding four villages in shares with Government (Rápálon, &c.) The revenue of the *jágirdárs* is Rs. 2,343, which is divided amongst six or seven families.

Sontiwálá; holding three villages in shares with Government, and having an income of Rs. 5,231.

Shamspur; two villages with income to the *jágirdárs* of Rs. 2,587.

Saloudi; one village (shared) with an income to *jágirdárs* of Rs. 1,703.

These are four communities of *jágirdárs*, descendants of old Sikh confederacies. The Bhaic of Bágrian (*see* para. 62) and the Dhín Mulánáh (Amballa) sardár have each a village in *jágir*.

Mention has been made in Chapter II of the various minor chiefs who held the *tahsíl* at the time of annexation. Such of these as were driven across the Sattlej, and have no further interest for us here, I need not notice: but there are one or two whose families

Extinct or decayed families : Sodhis of Machiwárah.

have since become extinct; or who, though losing their possessions after the Sattlej campaign, maintained their local connection. The Sodhis of Máchiwaráh held two or three villages in the neighbourhood of that town, and a masonry fort in it; but the *jágír* was confiscated for their conduct in 1845. A representative of the family still resides in Máchiwaráh, and owns a little land; but has no position.

There were a good many branches of the Kákar family, which came

Kákar family.

from the Jalandhar Doáb. One of these took possession of several villages about Bahlolpur; but was spoiled by Máharája Ranjít Singh who, however, restored some of their possessions, giving them in *jágír*. For the conduct of the family in the war of 1845 the greater part of the *jágír* was confiscated, and the rest lapsed by escheat shortly after. The only legitimate survivor at present is a female, who holds the family fort at Kakrálá.

There was a large *jágír* held at the time of annexation by Sardárni

Khannah *Jágír*.

Daian Kour of Khannah, the daughter of Dasoundha Singh, a Mánjha Jat, who had established himself at the same time as the other *jágírdárs* from across the Sattlej—see paragraph 26. He was the servant of Tára Singh Ghaiba referred to there. Daian Kour was the widow of a son of the Rája of Jhind; and was continued by us in the possession of the *jágír* of her father's villages till her death without issue in 1850, when the *jágír* lapsed. She had a large fort at Khannah. The *jágír* consisted of seventeen villages with a jamma of Rs. 30,217.

The ancestor of the Kheri Sardárs, Nand Singh, was a Jat who

Kheri *Jágír*.

came from the Mánjha to assist in the capture of Sirhind; and afterwards established his power over a very fertile piece of country in the south-east corner of the tahsíl. This was then only partly settled by Mahomedans and others, many of whom deserted their lands; and to Nand Singh is due the founding of most of the villages of the Kheri iláqa, which is now the richest and most highly assessed portion of the district. The family maintained an independent position till they were absorbed by us in 1846. The *jágír* was continued to S. Basant Singh, who was succeeded by his son Hari Singh, who died without issue in 1866. The *jágír* then lapsed. Sardárni Nihál Kour, widow of Hari Singh, and two other female relatives, Ratan Kour and Sáhíb Kour, enjoy considerable cash pensions, and Nihál Kour has a life interest in the estate of Hari Singh which is very large, consisting of shares in a great many villages, and considerable areas of Bir land. The Sardárni is a sister of Sardár Badan Singh of Maloud.

91. Besides the Maloud family, there are one or two others which

Minor *Jágírs* of Ludhiána tahsíl.

hold smaller *jágírs* in the Ludhiána tahsíl. The Khosa family of Jats belong really to Bankandi in Ferozepur district. They hold three or four villages in shares with the

Khosa *Jágír*.
Maloud family. Their revenue is Rs. 3,353.

There are two families of Kalál Jágírdárs at Butáhri and Hás,
Hás. who hold the villages given them by the
Abluwália Chief. Their income is Rs. 2,506.

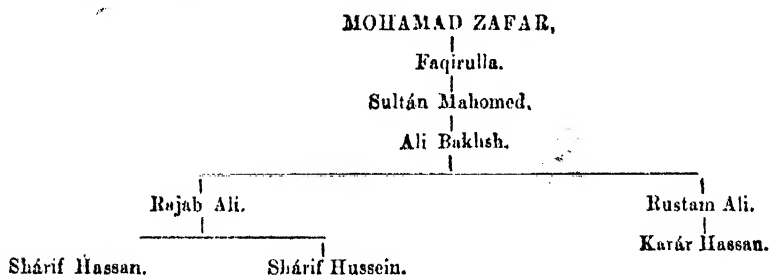
The Bháie of Bágrian has been already mentioned in the preceding paragraph. He has a jágír of four villages in this district with a revenue of Rs. 6,061, as an endowment of his Langar or Alms House (see paragraph 65).

The Bhaie of Arnouli, who has a jagir in Amballa, holds one village (revenue Rs. 1,800) in this tahsil.

Of the Kákars who held the Ludhiána Bét at the end of the last century there is one representative, who resides in Báranhára and is in receipt of a pension; while an adoptive grandson of Sudha Singh, Gil, also gets an allowance and lives at Mángat.

92. The children of Maulvi Rajab Ali, the well-known Mir Munshi of the Lahore Board of Administration, reside in Jagráon, where they have very fine houses; and they hold two villages of this tahsíl with a revenue of Rs. 3,092 in jágír. The founder of the family was Muhammed Zafar, a Saiad, who settled in the neighbourhood of Jagráon under the Emperor Mahomed Sháh, and got a grant of some villages round Talwandi Kalán. His descendants lost their possessions when the Sikhs took the country from the Ráís. Rajab Ali subsequently recovered the jágír of two villages.

The pedigree is—



None of the present generation have taken service. The tomb of Faqirulla still stands in Talwandi.

There are Sodhi families in Mallah, Bhamipur and elsewhere, holding petty jágírs which are gradually lapsing; and Jat families in Rájáuanah and Tughal; but these do not deserve mention.

93. The Ráís of Raikot played such an important part in the history of this district that I may give some of the details connected with the family. They belong to the "Manj" Got or subdivision of the Rájput tribe; and the ancestor of the Ráís, Rána Mokal, is said to have come from Bhatanír (or Jesalmír), and to have settled in what is now Farídkot territory. Fourth in descent from him was Tulsi Dás, who become a Mahomedan in the

reign of the Emperor Ghiásuddín Ghori, the family chronicle says, that is about the middle of the 12th century (the same period as that to which the Ghorewáh Rájputs of the east ascribe their arrival in the part of the country now held by them) and was called Shekh Cháchu. His sons, Bharn and Lapál, came to Haṭur, a large village in the Jagráon tahsíl, where they appear to have lived by plunder under the shade of an unfortunate Panwár Rájput, called Udho, the circumstance being recorded in the popular tradition 'Kháun pínu Bharn Rái : Pakara jána Udho Panwár,' which means that Bharn got the plunder, and Udho the blows. Finally Bharn made himself master of Haṭur, while Lapál settled in the adjoining Sháhjehánpur, which his descendants still own. Seventh in descent from Bharn was Kalha I, who took service with a Delhi Emperor called Aláuddín, perhaps the last of the Saiad dynasty, at all events in the beginning of the 15th century. Kalha founded Talwandi, to which place the family moved; and obtained an assignment of the málguzári of villages in the neighbourhood, for which he had to pay Rs. 1,25,000 of revenue, and also the title of Rái. The family maintained its position as a feudatory of the empire ("zemindár" or "mustájir") under the Lodis and Mughals for several generations, and one of the Ráis is said by the family chronicle to have been put to death for refusing a daughter in marriage to the Emperor Akbar. On the decline of the Mughal empire from the beginning of the 18th century the Ráis became involved in disputes with the Governor of Sirhind; and Rái Kalha III, who appears to have been a ruler of very great ability, extended his power up to Ludhiána, which passed into his hands a few years before the capture of Sirhind in the manner described in paras. 25* and 26. After that event he established independent power over the whole of the Jagráon and the greater part of Ludhiána tahsils, and also a large portion of the Ferozepur district. The family was on at least equal terms with the Pathán Rulers of Maler Kotla and of the Phulkian Chiefs, with the latter of whom their relations were very friendly on the whole. It was in the time of Rai Ahmed, successor of Kalha II, that Raikot was built*; and many other towns and villages, amongst them Jagráon, owe their origin to the family, whose rule appears to have been very mild. Rai Kalha III was much the ablest of the Ráis; and under him the family reached the height of its power. He was followed by his son Ahmed, who ruled only a short time. In 1779 A. D., Rái Aliás, a minor, succeeded, and the affairs of the State were managed by two Gujars, called Roshan and Ahmed, the latter whom asserted his independence at Jagráon, but was expelled. It was at this time that the Sikhs from across the Satlej commenced their attacks under the Bedis, and Roshan was killed in an engagement with them. The Bedis got temporary possession of Ludhiána, and some of the country about; but Patiála and other Cis-

* The names Kalha and Ahmed occur several times in this family, and this has caused some confusion. It was a Rai Ahmed who founded Raikot, but this was long before the time of the great Rai Kalha, whom I have called Kalha II in para 24.

Satlej powers took up the cause of the Ráís ; and the Bedis were expelled. In 1802, Rái Aliás was accidentally killed while hunting near Jagráou, and there were left of the family only two women—Nur-ul-nisa, his mother, and Bhágbhari, his widow. In 1806 Ranjit Singh made his first expedition into this country ; and without a struggle dispossessed the Ráís of all their possessions save two or three villages, which he allowed for their maintenance. On annexation of the country by us, this jágir was continued to Bhágbhari till her death in 1854, when it lapsed. The representatives of the family now left are Imám Bux, son of Bhágbhari's brother ; and Ahmed Khán, another distant relation of the last Rái. The former of these Bhágbhari adopted, and he receives a pension of Rs. 200 per mensem for his life. Both have considerable possessions, Ahmed Khán and his brother owning two whole villages, besides their share in the ancestral lands in Talwandi and Ráikot. The houses belonging to the family in Ráikot and Talwandi are in the hands of these gentlemen, but with Haṭur they have now no connection.

94. Some mention should be made of the political refugees and pensioners, who followed us from Afghánistán in 1842, and had Ludhiána assigned to them as a place of residence.

The family and dependants of Sháh Shuja have resided here since our withdrawal from Cabul in 1842. Shabzáda Sháhpur is the son of Sháh Shuja, and was proclaimed Amir on his father's death, but he enjoyed the dignity for only a few days. Another of the family, Sháhzáda Nádir, is an Honorary Magistrate, and several of the rising generation are in our service as tahsildárs, extra assistants, or in the army and police. The family altogether receive Rs. 1,815 per mensem in political pensions.

The family of Abdul Rahmán Khán, the Nawáb of Jhajar, executed in 1857, was sent here after the mutiny, and has since resided, drawing pensions which aggregate Rs. 2,300. There are three sons of Abdul Rahmán and an uncle, Ali Mahomed, who appears to be the leading man of the family.

Saleh Mahomed Khán, who came with us from Cabul in 1842, was in receipt of a pension of Rs. 1,000 per mensem, and his son has succeeded to half of it. Another Cabul pensioner of note was Mahomed Hassan Khán, who also distinguished himself in the mutiny. He had a pension of Rs. 800, and his family have now about Rs. 300 per mensem. The well-known Mohan Lál (Agha Sáhib), Hindu, Christian, and Mahomedan lived for many years here, and has left some descendants of various religions.

CHAPTER IV.—PRODUCTION AND DISTRIBUTION.

A.—Agriculture.

Area under the various crops and their distribution.

95. The following is an abstract of the area in acres and percentages under the various crops grown in the district.

KHARIF OR AUTUMN HARVEST PERCENT 44				RABI OR SPRING HARVEST PER CENT. 56			
Crop.	Irrigated.	Unirrigated.	Total.	Crop.	Irrigated.	Unirrigated.	Total.
Sugarcane ...	9,322 1	3,942 1	13,264 2	Wheat ...	55,429 7	69,313 9	124,742 16
Maize ...	36,523 5	14,446 2	50,969 7	Barley ...	9,818 1	14,542 2	24,360 3
Cotton ...	13,829 2	4,691 1	18,520 3	Gram ...	1,698	29,896 4	30,994 4
Pulses ("Moth," &c.)	1,422	90,984 12	92,406 12	Wheat with gram	4,712 1	166,782 22	171,494 23
Fodder ("Charri," &c.) ...	5,140 1	102,210 13	107,350 14	Barley with gram	1,456	52,236 7	53,692 7
"Charri" with "Moth," &c. ...	702	30,025 4	30,727 4	Others ...	9,779 1	13,797 2	23,576 3
Rice ...	41	2,492	2,533	TOTAL ...	82,292 10	346,566 46	428,858 56
Others ...	3,649 1	11,792 1	15,441 2				
TOTAL ...	70,628 10	260,582 34	331,210 44				

Sugarcane, maize, cotton and wheat are in the uplands only raised in land artificially irrigated, the unirrigated entries for these crops being for the Bét. The distribution of the various crops over the district is as follows : Sugarcane is grown in the first twelve or fifteen miles of the Bét, and in the uplands of Samrála tahsil, and of Ludhiána except in the Jangal villages and in the country about Pakhowál ; but the proportion is higher in Samrála, and gradually decreases as we go westwards. There is also very little of it in the sandy tract along the high bank : and none is grown in Jagráon. Cotton is generally grown where cane is, and also further west ; but very little in the Jagráon tahsil. The other crops are grown everywhere, except that in the uplands maize and wheat require irrigation, and there is none in the Jangal villages. The autumn unirrigated crops, pulses and fodder are the same throughout the district ; but in the Jangal villages "bájrâ" sometimes takes the place of "joár," because, I suppose, it is more hardy. So too wheat mixed with gram is the unirrigated rabi crop in the eastern parts where the rainfall is heavier ; while in the more arid tracts of Jagráon, and the outlying villages barley takes the place of wheat. Thus in the east of the district, where the percentage of irrigation from wells is highest, we have a larger proportion of the superior crops, cane, maize, cotton and wheat ; while in the western part (Jagrâon tahsil) there is not much irrigation, and the greater part of the area is under kharif and rabi rain crops.

96. An account has already been given (para. 16) of the annual and monthly rainfall. The agricultural

The seasons : Agricultural year begins with the "Nimánia," which is the first of the half monthly fasts of the Hindus, and falls about the 15th June. Lands are rented and accounts cleared up by this date, and generally a new start made for the year. Most of the land has been enjoying a rest of two or three months, the exceptions being where sugarcane, some of the cotton, and patches of tobacco and vegetables round the wells occupy portions of it. The monsoon breaks from ten to twenty days after the Nimánia, towards the end of the month of Hár ; and agricultural operations commence at once with the sowing of the various autumn crops, except the cane and cotton which are already in the ground. Falls of rain at intervals during the months of July-September bring the autumn harvest to maturity ; and in September the final ploughings for sowing the rabi crops (the land has been carefully prepared before) commence. From the middle of September to the end of October the rabi sowings go on, and from the end of October to the middle of November the kharif grain crops are reaped, and the cotton pickings begun. This period of two months (15th September to 15th November) is much the busiest time for the cultivator. If the rainfall has been good, the rabi sowings are completed early in November ; but, if the rains have ceased too early, and there is not a sufficient amount of moisture for the sowings, they go on into December, and a late shower in

October or November is then of the greatest use. The benefits of a fall at this time are celebrated in the popular couplet :

Ja mih pia Diwāli,
Jia phus, jia hāli.

"With rain at the Diwāli (end of October) a worthless fellow and a good cultivator are on equal terms." The rabi crops are brought on by showers at two periods of the cold weather, about Christmas and towards the end of February ; and reaping begins from the Baisākhi day (1st Baisākhi, about April 15th), and the threshing is completed early in May. The sugarcane crop will not fit into the regular round of the farmer's year, and requires a special course of its own. It is sown in March, is cut and pressed after the middle of November, when the other kharif harvesting and the rabi sowing have been finished. Cotton is sown before the regular kharif seed time, but it fits into the harvesting season, being picked at intervals during November-December.

97. There are a number of soils recognized by the people, and with appropriate names. Our Regular

Soils: natural and artificial.

Settlement introduced an elaborate classification, but the names used were known in the country

before this. The land round a village site is referred to as "niāi" because of its situation even in the Jangal villages, where there is no irrigation, and no soil so designated in the Government papers. "Dākhar" applied to hard soils is a term that has been in use from time immemorial in the district. In the uplands the Jat will divide his land into "senju" (irrigated) and "māru" (unirrigated). The latter he will, in speaking to a revenue officer, describe as "tibba" or "ret," and sometimes as "budhi" if there is any appearance of sand to justify him ; or, if the soil is a good even loam, he will tell you it is "pilak," which is a very coarse cakey soil, almost barren, and worse even than sand. If it is a good dark stiff soil he will tell you it is "rarra," "chulan" or "kallar." In a village with light soils the people will speak with apparent envy of the "dākhar" or clay loam of some other village, where the crops are so good, while the owners of this latter sort of soil sigh for the light lands (called "resli") of their neighbours, which require little ploughing, and where the crops spring in the driest of years. In the Bét the people speak of "mand" or flooded land ; "rakar" or "kallar," hard land yielding little ; "passi," or soil in which the sand is very near the surface.

In the Regular Settlement the terms used were "niāi" or land adjoining the site and heavily manured ; "dākhar,"

Classification adopted in former and present Settlements.

or hard clay soil ; "rousli" or ordinary loam ; and "bhur" or sand. These when distributed

over the irrigated and unirrigated lands gave much too elaborate a classification. Thus in the Dhāia there were these classes of irrigated lands : "Niāi chāhi," "dākhar chāhi," "rousli chāhi," "bhur chāhi,"

and finally "mohíta cháli," or unirrigated land capable of being watered by a well. We have simplified the classification as far as we could, and have divided all lands for assessment purposes into—*For the Dháia*: (1) "niai cháli" or first class irrigated land adjoining the site; (2) other well lands; (3) unirrigated "dákhar" or "rousli," i.e. loam; and (4) "bhur" or sand. The first of these is an artificial class, but the division of unirrigated lands is a broad distinction, which the people themselves recognize. *In the Bét* no natural classification was attempted; but the lands were recorded as (1) manured and ordinarily bearing two crops ("dofasli"); and (2) unmanured, bearing one crop ("ekfasli"). These divisions are quite enough for practical purposes, and I do not think that anything would have been gained by attempting a more elaborate classification. In the uplands I began by having three classes of unirrigated lands: clay loam (dákhar), sandy loam (rousli) and sand (bhur); but further experience induced me to combine the first two. In the Bét there is great uniformity of soil. The only variations are when the land is newly formed ("mand," where it lies low and is moist, or where the sand is near the surface ("passi.")

In the uplands I have already pointed out that the lighter soils prevail along the high bank and to the south-west of the district, while those of the eastern portions are much stiffer. Putting irrigation aside, the best soil is that which best suits the rainfall. A hard "dákhar" soil requires a great deal of rain, which it generally gets for the kharif harvest; but even this crop suffers from breaks in the rains. But the most critical period of the whole year is the time of the rabi sowing. It is well known that a clay soil is capable of absorbing a much greater amount of moisture than a sandy one; but the former requires a very heavy rainfall to saturate it thoroughly, and dries much more easily, which is a very important point in this climate. Dákhar land requires to be thoroughly moist before ploughing is possible at all; and even if it has been reduced to a good tilth, but the rains have stopped too early, it will often be found to have lost all its moisture; and the cultivator knows he may spare his seed, for it will not germinate. If the moisture for sowings is good, and if the usual winter rains do not hold off and are also sufficient, the produce of dákhar will be much heavier than that of any other soil; but it is seldom that all these contingencies turn out as the cultivator would wish them to. On the other hand rousli or sandy loam is very safe for the rain crops. It requires little ploughing; and, though not capable of holding so much as dákhar, retains moisture in the subsoil much better. For weeks after rousli land has been ploughed and rolled preparatory to sowing, it will be found that there is good moisture at a few inches from the surface. I think then that the best soil of the district for rain cultivation is the rousli, for it is never without a crop; while, even in the Samrála villages with a higher rainfall than elsewhere, we find that every fourth or fifth year a great part of the

unirrigated land has no crop, because sowing was impossible for want of moisture. Many villages have both light and stiff soils in their area; and this is the most desirable combination. "Bhur" I have called sand, but it is really a shifting and sandy soil on a good subsoil. "Bhur" lands are poor, and the crops on them are in the most favourable years rather weak, but they have the advantages of needing almost no tillage and retaining what moisture they get most tenaciously in the subsoil. They suffer, however, in a year of heavy rainfall, and in the villages along the high bank the crop is generally best when that of the lands further inland is drying, or when no sowings have been possible.

In the Bét "réh" or the saline efflorescence, due to impeded underground drainage, is, as I have explained in paragraph 7, common along the Budha Nala, but not elsewhere, except to the west of Ludhiána.

In the neighbourhood of Nurpur barren patches will be found in the wheat fields; while further west, in the villages surrounding the plain of Aliwál, the surface is encrusted with it, the land being apparently water-logged, as is proved by the large area under water which has oozed out of the ground just below the high bank under Bharowál. Elsewhere, in the Bét and in the harder soils of the Dháia, the land may show a tendency to saltiness, especially in drainage lines, this being evident from the failure of the crop to germinate; such soils are called "chilan" or "kallar." "Pílak" is a soil of a deep yellow colour, more or less unfruitful, and distinguishable by its tendency to cake. It appears to be composed of a large grained coarse sand, like gravel; and is the worst of all Dháia soils.

98. Of the total cultivation of the district 15 per cent. is returned as irrigated. The irrigation is at the present time entirely from wells. In the Bét the depth of the water below the surface is only eight to ten feet, and the lift very easy. The wells here are of two sorts, first "kacha" or temporary wells with a lining made of "pilchi" (see para. 12), the water being raised in an earthen pot suspended from the end of a lever or pole, the other end of which is heavily weighted. The pot is pulled down into the well by a string attached to that end of the pole; and the weight at the other end raises it when full to the surface, where it is emptied into the irrigating channel. This apparatus is called a "dhinkali," and has the advantage of only requiring one man to work it. There are also packa* wells of small diameter, worked like the other wells of the district with a bucket raised by bullocks. At the Regular Settlement there appear to have been very few packa wells, and people were content with the simpler "dhinkali;" but within the last 25 years nearly one thousand packa wells have been sunk, mostly in the villages just below Ludhiána city and to the west, for irrigation is not required in Bét lands further east. The "dhinkali" is capable

* i.e., lined with masonry.

of watering only about an acre of land; and, although the Araien cultivator can grow a great deal in this small area, he can do much more with cattle and a permanent well capable of watering six to seven acres; and the change is a decided advance. The Persian wheel is used in one or two villages in the Jagráon Bét, adjoining Ferozepur.

In the Dháia the wells are all of masonry. The water is raised by means of a rope and leather bucket (*láo*, *charsa*), worked by two pairs of bullocks alternately going down an inclined plane or run. The rope works over a wheel or pulley, raised a little above the well on a forked stick. To one end of the rope is attached the bucket, and the other is fixed to the yoke of the bullocks, which are driven down the run. When the bucket rises to the top, it is rested on the edge of a reservoir and emptied into it by a man standing there for the purpose, when the rope is unfastened from the yoke and the bucket allowed to descend into the well. Three or four men and two pair of bullocks are required for one bucket, and can work for three or four hours at a stretch. For the continuous working of a single bucket well four pairs of bullocks and six or eight men are necessary. With this complement it will go on for the whole day. Nearly half of the wells in the district have two buckets and two sets of gear completely separate, so that both are worked at the same time. These are much wider than the single bucket wells, being 11 or 12 feet in diameter, (while the latter are generally 7 or 8), and cost more to construct. The usual cost is from Rs. 250 to Rs. 300 for a single, and from Rs. 400 to 500 for a double well. The compensation paid for wells destroyed by the Sirhind canal in 1869 averaged between 400 and 500. Irrigation is also given in places (*Bét* and *Dháia*), from village tanks, the water being raised three or four feet to the level of the fields by means of a basket worked by two men with ropes; but this is only possible at certain times of the year when the tanks are full. The water is first run into a small well or reservoir (called "*chubi*"), and thence raised by a basket (called "*dal*") into the irrigation channel. The basket is lined with leather, and has two ropes attached to it, one passing under each side and coming out at the corners. Two men stand on opposite sides of the well holding the two ends of each rope, and raise the water in the basket.

99. The distance of the water from the surface and the depth of the water in the wells has been recorded by us for every village in the district. The result of this record is to show that beyond the influence of the river, which affects the water level to some distance from the high bank, the depth below the surface of the water in the wells diminishes as one goes from north-east to south-west in Samrála and the continuous part of the Ludhiána tahsíl. This variation is most marked in Samrála, where it is from 42 or 43 feet in the villages to the south of Bahlolpur, to 30 feet at Isru, and 27 feet in the detached villages to the south-west of this, and also about Maloud (Ludhiána

Spring level; variations in depth of the wells.

tahsil.) In Ludhiána the variation is not so great, the recorded depth being not less than 35 feet in any of the villages about Pakhowál; while beyond our boundary the depth increases, till we reach 75 feet at Sahna, and upwards of 100 beyond it. In Jagráon there is no such fall of spring level; but the depth to the water is much the same in all the eastern villages of that tahsil, while it increases towards tase south-west, being upwards of 50 feet at "Hatur" in the south-west corner. Thus we have a spring level which approaches the surface in the eastern portion of the district to a distance of some 40 or 50 miles in the same direction as the slope of the country, and then gets deeper, till in some of the Jangal villages water for drinking purposes is raised with very great labour; while in the western portion of the district with the same slope there is a steady fall from the first.

The depth of water in the wells varies a good deal according to locality and season. It is generally twelve or fifteen feet, but in a dry year will fall much lower. It is said that during the last few years the level has been high. The amount of water which can be drawn out of a well depends on the source from which it is fed. The supply from beneath the lower clay is inexhaustible; but most wells are filled from the sand, and are liable to be worked dry, especially where the rainfall has been deficient.

100. I will next give an account of the method of sinking a well.

Method of constructing a well. An excavation of the size designed for the well is first made through the upper stratum of clay soil till the sand is reached, generally at a depth of fifteen to twenty feet; and at the bottom of this is laid down the "chak" or cylindrical framework of wood on which the masonry lining of the well is to be rested. This lining is built up to the surface, and above it to a height of eight or ten feet, and weighted down while the sand at the bottom is scooped out. The structure gradually sinks through the sand, the "chak" keeping it firm. Three sorts of sand are met with in the excavation; first, fine dry sand (called "reti"), and then moist, coarser sand ("reta"), and finally sand which comes out in lumps mixed with pieces of clay and kankar (called "ghati"; and it is from this last that the water is generally drawn. The sinker says that a good foundation has been reached ("pathan lag gaya"). The top of the well is then finished, and the reservoirs and other appliances built. In some villages the lower stratum of clay is reached (called "pándu"), and this gives a sure foundation for the well. A hole about a foot in diameter is driven through the clay into the sand below it by means of a pointed iron instrument; and the water rises ("ubal") as in a spring. It is a great piece of luck to have a well founded on the "pándu," for it can never fall in, and the supply of water is unlimited. Such a well is generally worked with three or four buckets. The "pándu" is said to be reached in most wells sunk in villages about Maloud, and occasionally elsewhere. A well not found-

ed on the "pánda," besides having a supply of water that is liable to be exhausted, may suddenly disappear altogether, or gradually subside, the foundation being undermined by the action of the bucket.

101. Wells are worked with one, two, three and even four buckets ; and we cannot judge of the irrigating power by merely striking an average of the area for each well. It is usually calculated that a two-bucket well can irrigate half as much again as a single well ; and at this rate we have the average area watered by one of the latter sort 12 acres, and by one of the former 18 (in the Dháia). I extract the following from my Assessment Report of Samrála tahsil :—" But to form an idea of the irrigating power of a well, we must examine the area under the various crops and the seasons during which they are irrigated. Roughly speaking, the rabi crop is irrigated for six months (October to March), and the sugarcane crop for ten months (May to February). The other kharif crops, cotton and maize, require irrigation for nearly four months (July to October). The number of waterings given varies with the character of the season ; but generally the rabi crop requires one every twenty days, and the cane once a week. Taking the rabi crop then, we have 28,000 acres watered once in three weeks, or 9,300 once a week, and 6,200 of sugarcane. This gives about five acres watered every week by a one-bucket well. In the kharif the area is naturally a good deal less. The estimate given me by zemíndárs is one bigah (packa) or five-eighths acre a day for each bucket." The average area watered by a masonry well in the Bét is nearly seven acres, which bears about 12 acres of crop in the year.

102. It is expected that irrigation from the Sirhind canal will be commenced from the rabi of 1883-84 in the villages to the south-west of the district ; and in a few years it is likely to be extended to all villages in the uplands lying west of the Maler Kotla road. The distributaries are at present under construction.

103. I will next give some account of the ordinary agricultural implements of the district. The plough "hal" universally used is the "mona," (see "Panjab Manufactures," page 314), which is, I think, decidedly the best of the two patterns in use in the province, being much stronger than the other. It is of course a primitive implement with no mould board and no turning action ; but it opens the soil to a depth of eight or ten inches, and produces a fine tilth. The various parts of it are called "mona" (the block), "thaili" or "arli" (the handle), "phála" and "cháó" (share and coulter), "halas" (beam). The bullocks are yoked by a "panjáli," or frame work passing over their heads into which the "halas" is fixed. To the plough is attached when necessary, a "por" or tube made of bamboo hollowed with a leather mouth, through which the seed is drilled. Ploughing is followed by rolling with a "Sahága," a beam of wood to which the

cattle are yoked, the man standing on it and driving. The *sahágá* is also used in stiff soils for clod crushing. "Paraíen" is the goad for driving the bullocks. "Jindra" is a rake without teeth, worked by two men, from one side with a handle, from the other with a rope. It is with this that the irrigated lands are ridged off into "kiáris" or plots for irrigation. The "kahi" or mattock is mostly used in making the irrigation channels (*ádhi*). The hoeing is done with a "ramba" or "kurpa," a trowel with a crooked handle. The crop is reaped with a "datri" or sickle, and threshed with a contrivance called *phalla*, and winnowed by being thrown into the air with a pitchfork ("salang") or from a basket called "tangali." The other chief implements are the "salang," a wooden fork with two prongs used as above, and also for making up hedges, &c.; the "kará," an iron rake or cutter, used in place of the jindra, and worked with bullocks in very stiff soils for levelling, &c.; the "kohári" or common axe for cutting wood; "gandása," an axe or chopper with a long handle, the blade being a thin piece of iron about an inch wide and six inches long fastened to the end by two spikes of iron; a "gandási" the same with a short handle for chopping fodder; a "gandálá" or stick tipped with iron for making holes into which the branches set up in the hedges are set. The principal parts of the well gear are the "charsa" or bucket; the "láo" or rope with which it is raised; the "páomí" and "kohir," wheel on which the rope works and fork in which it fits. Water is raised from tanks, &c., by a basket lined with leather worked by two men with ropes (called "dal"). The sugarcane press is called a "belna" or "kulhári," and a description of it will be found under "sugarcane."* A detailed list of all implements and appliances is given as an appendix to this report. Small carts are used by most cultivators for bringing the harvest from the field, carrying manure, &c. They are of the ordinary pattern of country cart; but do not go beyond the village.

104. The implements at the command of the agriculturists are,

General sketch of the
agriculture of the district.

it will be seen from this, few in number and of the simplest character; but by their means the Jats, and a few of the better cultivating Mahomedans too, are able to show an agriculture that will bear comparison with that of most countries. The operations of agriculture differ in the various portions of the district according to the crops grown, and the presence or absence of irrigation.

In the uplands the wells generally lie round the village site in a ring, the unirrigated lands being outside of this. Cultivation at the wells in the Dhiáia. In some of the small villages of the Kheri iláqa (Samrála) the whole area is practically irrigated, and in most villages of this tahsíl upwards of 40 per cent. is regularly watered. As we go westwards the proportion gradually decreases to about 10 per cent. in Jagráon tahsíl, while the outlying villages to the south have none at all. The irrigated cultivation is best studied in Samrála where it is in greatest proportion, and here it

varies in quality from that in the rich "niái" land adjoining the site on which is deposited all the natural filth of the village besides what it receives from the manure heaps, to the land attached to distant wells, to which manure is with difficulty conveyed and grudgingly given. The niái circle comes so close to the site as just to leave room for a road. It may be said to be always under crop, and regularly bears two harvests in the year. In January or February, while the rabi crops are growing, the fields selected for sugarcane are manured, watered and then ploughed till the soil is reduced to a fine tilth to the depth of eight or ten inches. The cane is then planted (March-April) and watered at intervals. Then the fields for cotton are treated in the same way, and most of the crop sown before the rains in April-June. When the rains begin it is time to sow the maize, and this is done from the middle to end of July, in land prepared in the same way as for the other two crops. The maize fields are those nearest to the village and the richest, what the people specially denote as "niái," or land adjoining the site. The tilth produced by the preparation for these crops is very fine, being the result of successive ploughings and rollings. When the seed has been put down the field is banked off into small divisions (kiáris) with a rake (jiindra) for the purposes of irrigation, each of these being flushed with water in succession. This closes the kharif sowings in irrigated land. After the first one or two waterings the fields are in the case of all three crops carefully hoed, the cultivators working through them steadily in a line, removing grass and weeds and loosening the earth, which is apt to cake from the watering and stop the growth of the plant. The amount of irrigation which these crops receive depends on the character of the rains. The cane has to be kept alive through the hottest part of the year, but luckily it is the only crop to be attended to then. After the rains have commenced the well has to be turned on wherever there is a break, and the necessity is more constant towards the end of the hot weather. It is when these crops have grown to their full height that the Samrála and eastern Ludhiána villages look their best, and the site is surrounded to the distance of 200 or 300 yards by a magnificent growth of maize and cane, eight or ten feet high. The maize is ripe by the end of October, and is reaped in the beginning of November. The sugarcane is generally ready for cutting about the beginning of December, and the cutting and pressing go on into March. The rabi sowings of wheat and barley in irrigated lands are made in the beginning of November either in fields near the site, which have just borne a crop of maize, or on more distant ones which have been lying fallow ("sáuwe") during the kharif. If there is not sufficient natural moisture, a watering is given from the well, and this is generally necessary. Several ploughings in succession produce, as in the kharif, a fine tilth, and the seed is sown broadcast, ploughed in, and the land rolled and banked for irrigation. The crop gets one watering a few days after sowing, and others at intervals till within a short time of its ripening, the number of waterings depending on the amount of rain. The rabi is off the

ground by the end of April, and is followed by small patches of tobacco, onions, &c., which grow in April-June; but most of the land not under sugarcane is left alone for two months till the rain falls. When land bears two crops in the year, (or the equivalent one of cane) we have called it "dofasli harsálá," i.e., bearing two crops every year. Where a fallow is usually given, the system is "ekfasli harsálá," i.e. only one crop in the year is grown. This description of irrigated cultivation will apply to villages in the Jagráon tahsíl if we cut out the sugarcane and cotton. The maize gets all the attention and the supply of manure distributed in Samrála between the three crops, being the only kharif at the wells. It occupies ten out of a total of sixteen thousand acres of irrigation in this tahsíl.

105. In the Dháia unirrigated lands there is a very well established system of cultivation. To explain it, we must begin with land from which a kharif crop has just been taken. When the rain falls in Mágh (January-February) the field is ploughed and left open to the action of the elements. If the cultivator has time he may plough it again whenever there is a fall of rain, but it is not often that he can do this. When the autumn rains fall ploughings again commence in July, and the land gets a number of them in succession, and is prepared for the rabi sowings, having had a year's fallow, and being reduced to a very fine tilth by the final ploughings in September. Sowings ordinarily commence from the middle of September, the gram being the earliest crop in the ground, and being followed by wheat and gram (mixed), wheat, barley, in this order; and they go on in ordinary years till the beginning of November, and till much later if the rainfall is bad. The fields are weeded at intervals, "piáji," thistles, &c., being carefully removed. The crop ripens in April, and harvesting begins about the Baisákhi day (10th-15th April), a little being done before that. When the monsoon rains begin the land out of which this rabi crop has been taken is ploughed once, and the kharif pulses and millets sown in it without further preparation, as none is really necessary. The kharif ripens at the end of October. The course of cultivation sketched above extends over two years, in the first of which the land bears no crop, although really the rabi of one year is followed by the kharif of the next; but of course the whole of a cultivator's land does not go through the various stages at the same time. Part of it will be under crop at the time that the rest is enjoying a fallow. I have noticed in para. 85 the manner in which the lands of a village are generally distributed amongst the community, each sharer having a portion in each of the blocks into which the lands are divided, and his fields being scattered all over the area of the village or subdivision. It is obviously convenient for the people of adjoining fields to have their land under crop or fallow at the same time, and in fact the members of the community always pull together in this matter, with the result that the village area will be found mapped out into blocks of fields

which are either cropped or fallow at the same time. In small villages there may be only two such blocks, but there are usually a good many. Besides the advantage of the system as best suited for the land, it has others incidental to it, such as the convenience of being able to graze the cattle over a large piece of fallow, and the facilities for watching the crops.

I have spoken of this system of cultivation, (which we have named "dofasli dosála," or the two years course, the land yielding two crops in two years) as extending over the Dháia; but in the light soils immediately over the ridge or high bank (our Lower Dháia Assessment Circles) the area under the rabi is much larger than that under the kharif, because for various reasons the former is found to pay better; and a large proportion of the land is under rabi every year (ekfasli harsálá).

106. In the eastern portion of the Bét there is no irrigation, but the soil is naturally moist, and the cultivation of manured is of the same nature as that of irrigated land in the Dháia, cane, cotton and wheat being the crops. The "niái" area generally lies round the site, but not as a matter of course, for there are no wells to make it necessary that the superior crops should be raised in a fixed area, and we accordingly find that it is very often shifted. In fact two crops of sugarcane can be grown in any land that gets sufficient manure, though it is generally convenient to have these crops near to the village. Except for the waterings, the description of the irrigated cultivation of the Dháia will apply to the manured lands of the Bét. In the western half of the Bét there is a great deal of irrigation, and the superior cultivation is all at the wells. Maize followed by wheat is grown as in the uplands, and there is also some very fine market garden cultivation, especially under the city of Ludhiána from which an ample supply of manure is drawn.

In the Bét the "dofasli dosála" system of cultivation is followed for unmanured lands in villages at a distance from the river; but even here the area under wheat is larger than that of the kharif. In this case all the land in turn is generally put through the two years course. Thus a field will bear a rabi for three or four years in succession, and then this will be followed by a kharif, to which will succeed a year's fallow. In the moister lands near to the river a rabi is grown year after year. The unmanured kharif crop is, I may mention, nowhere of much importance in the Bét. The newly recovered lands in the "Mand" are ploughed up roughly the first year; and "massar" or some other poor crop sown, often without removal of the "pilchi" and reeds. Next year the land receives better tillage and is cleared, the crop being a mixture of massar with wheat or barley; and in the third or fourth year wheat alone is grown, the soil having become quite clean. The rabi in these new moist lands is often preceded by a kharif of rice,

mash, maize, &c. As a whole the agriculture of the Bét is much inferior to that of the Dháia. There are no light soils like the rousli of the uplands, and the land requires much greater labour, and is naturally foul with weeds. Besides this the Mahomedan proprietors, except the Araiens and Awans, are generally rather poor cultivators. The fields immediately round the site, or at the wells where there is irrigation, are kept clear enough ; but in the outlying ones the crop will generally be found choked with weeds, the result of insufficient ploughing and failure to attempt keeping them down.

107. In irrigated lands preparation of the land for a crop by ploughing can begin at any time. The field is flooded and allowed to dry partially, and then ploughed five or six times in succession. This is always the method of preparation for maize and wheat ; but for cane the land is fallow (sánwe) during the cold weather ; and it is often ploughed like unirrigated lands with the aid of the winter rains. For cane it is said that eight or ten ploughings are necessary, and as many as 15 or 20 may be given. Maize generally gets five or six, and wheat four or five in irrigated land. Where the two years course is followed in unirrigated lands there are three recognized seasons for ploughing. When the rain falls in Mágh (January-February) the field from which a crop has been taken in October is ploughed twice in opposite directions, and left open to the action of the elements. If subsequent showers fall the cultivator may plough it again ; but he has seldom time to do this, at all events where sugarcane is grown. The next ploughings commence when the rain falls in Sáwan (June-July) ; and the land then gets three or four at intervals, being reduced to a good tilth, and then smoothed with a "Sahága" to keep the moisture in. In Bhádon, when the time for sowing approaches, one or two more ploughings are given according to the nature of the soil. The cold weather ploughing is well recognized by the people as the most important operation of all. The great increase in the fertility of the soil produced by its exposure to the air is easily explained on chemical grounds ; and I would refer to the experiments recently made in the N. W. P., which, if they did nothing else, proved that the cultivator knows more about his own work than he generally gets the credit for doing. The following popular couplet describes the value of the ploughings at the various seasons "Sál Sona ; Hár Rupa ; Sáwan sáwen ráwen. Bhádon ba baguchia : Tain kian báhi thi luchia," i.e., "ploughing in the winter is gold ; in Hár, silver : in Sáwan, indifferent ; in Bhádon it is repentance, ; what is the use of your going about it, you lazy rascal ?" Where, as in parts of the Bét, the two years course is not followed, winter ploughings are not possible. For the kharif only a couple of ploughings are given in the rabi stubble, the seed being sown with the second. Ploughing is always comm. ned in unirrigated lands a few days after the rain has stopped, when the land is beginning to dry this condition being called "vatar."

Three bullocks are usually taken out to the fields for the work, one always being at rest. The plough does not generally go very deep in the winter ploughing, six or seven inches; but in those of the rainy season the tilth produced is not less than eight or ten inches, the plough going deeper each time.

108. Sowing of the ordinary grains is done either broadcast ("chatta," or by drilling through a tube ("tor") into the furrows. The latter method is almost invariably employed in unirrigated lands where it is desirable to get the seed well under the surface in contact with the moisture; but there is no fixed rule in the matter. In irrigated lands and in the "Mand" Bét the sowing is broadcast. The people will tell one that in former times when there was plenty of rain this was the case everywhere. The kharif crop is sown broadcast more often than the rabi. After sowing the furrows are generally left open, always so in the western parts; but in Samrála tahsil the field is sometimes smoothed; maize and cotton are sown grain by grain by hand. Maize, it is said, should be so widely sown as to enable a man to run between the stalks. The method of planting cane is described elsewhere.

Hoeing ("godí, gudna") is done with a "ramba" or trowel, the worker going through the field in a sitting posture, carefully cutting out grass and weeds and loosening the earth round each plant.

The lands round the village site are always carefully hedged in the Dháia with kikar or ber branches fixed into the ground, and tied together with a rope of cane stalks which have been passed through the press ("thathe.") These hedges are strong, and keep out the cattle very well. They extend along the sides of the various roads leading to the site, and enclose the whole of the irrigated fields. At certain points there are openings with stiles to enable the cultivators to get to their fields. The people are more careful than in any other district that I know about keeping animals out of their fields. Each plot or collection of fields of sugarcane has a strong hedge of its own. The unirrigated lands are generally quite open, except in the Jangal villages, where the traffic is often kept to the roads by thick hedges of the prickly "mallah" or wild "ber." In the Bét there is not much hedging of any sort; but the níai lands are more or less protected according to the disposition of the people.

Cutting is done with a sickle (dātri). The cutter goes through the field in a sitting posture, laying down the handfuls as they are cut. These are afterwards tied into sheaves. Maize and joár are collected in a stack ("mohára") in the field, the stalks standing

upright. After a few days, as the cultivator has time, the heads are pricked off the maize, husked and collected in a heap, where they are beaten with a straight stick till the grain leaves the cob or head. The stalks are stored for fodder on the house tops or elsewhere. In the case of the other grains the sheaves are collected in the field, the stack being called "láhan," and thence taken to the "khalwārah" or threshing floor at the village, generally on a cart. The place selected for threshing is the hard, beaten ground, such as is found in the "goerah" of most villages. This is swept clean, and the crop is spread out on it in the form of a circle to the height of two or three feet, and the phala or thresher drawn round and round it by two bullocks driven by a man, or boy sitting on it. By the action of the phala and the trampling of the bullocks the straw is broken up fine, and the grain separated from the heads and husk. The phala is a square frame made of four sticks, each about three feet in length, and joined at the corners. The inside is filled with kīkar or ber branches, covered with one or two sheaves of corn, on the top of which the driver sits. For winnowing a breeze is required. The mixed grain and straw is first tossed into the air with a pitchfork ("salang"); and the grain separated from the straw. But with the grain a good deal of straw and chaff is still left; and to get rid of this the grain is taken up in a winnowing basket called a "chaj," and allowed to fall gradually from above the thresher's head, the wind blowing the remaining straw and chaff away from the grain. Of all the operations described in this paragraph this last is the only one which the cultivator does not invariably do for himself. The ordinary cultivating proprietor employs no field labour. His women bind the sheaves, and he does everything else himself; but it is the custom in places for the chamār or chuhra to work the "chaj." There is none of the waste on reapers' wages and other allowances, such as prevail in many districts. Even the village menials receive but a scanty share of the harvest.

109. It will be seen that in the Dhāia unirrigated lands there is an established rotation, the rabi crops, which obtain most of their nourishment from the soil, being followed by the broad-leaved kharif crops; which draw less on the soil and more on the atmosphere; and the two crops being succeeded by a year's fallow. In the Bét and other places, where this course is not followed, there cannot be said to be anything resembling a rotation, for there is only one crop to be grown. In irrigated lands there is very little approach to what could be called a regular course, for the crops here too are limited. Still the people very seldom grow their sugarcane in the same field year after year; but prefer, if possible, to have it following cotton. Some fields have undoubtedly been producing maize followed by wheat or barley, for centuries one may say, but the area so treated is limited to the fields touching the site. An ordinary manured field will generally go through such a course as this:—

Rotations.

Year.		Rabi.			Kharif.
First	...	Fallow	...	...	Cotton.
Second	...	Fallow or fodder crop			Cane.
Third	...	Fallow	...	...	Cotton.
Fourth	...	Fallow or fodder crop			Cane.
Fifth	...	Fallow	...	...	Maize.
Sixth	...	Wheat	...	...	Ditto.

Outlying fields are not so heavily cropped as this; and those in which maize and wheat are grown do not generally bear cotton and cane. In fact the cultivation of the two sets of crops is kept quite separate on many lands.

The usual complaints are occasionally heard about exhaustion of the soil; but they are not pressed upon one and there is little foundation for them. When it is said that the land does not yield so much as it did 200 or 300 years ago in the time of Akbar or before it, there is no reason for dissenting from the proposition. It was then only being brought under cultivation; and there was no necessity for cropping any of it regularly. Thus three out of four kinds of land enumerated in the Ain Akbari (Gladwin's Translation, Volume I, Part III) are fallow; and revenue was only paid for land when cultivated. The waste probably exceeded the cultivated area, and a new piece could always be brought under the plough when a fallow was required. The rates of yield given in the Ain are certainly high, but they are for the whole of India, and are not greater than would result if fallows were given to the land now. Thus the yield of wheat is set down at nine to eighteen maunds a bigah (our standard).

	Maunds.			
Gram	7½ to 13
Gur	7½ „ 13
Mung	3½ „ 6½

and these are not after all very heavy, taking both irrigated and unirrigated lands. It was in the nature of things that when cultivation had fully developed, a lower standard of productive power should be reached where manure was not used ; but there is nothing to show that within recent times, such as we have information concerning, this standard has decreased. The well lands, we know, will yield according to the amount of manure put on them ; and the system of cultivating the unirrigated is in most parts of the district sound, and not likely to cause deterioration.

110. I have already referred to the natural supply of manure which the fields just round the site receive by being made the receptacle of the village filth. **Manure.** The litter of the cattle is collected by the cultivators, each having his own heap, in hedged enclosures outside the site. The greater part of the droppings have been carefully removed for fuel, and the refuse consists of byre sweepings. By the commencement of the autumn rains these heaps have attained some dimensions, and the rains assist the decomposition of the mass, which is carted or carried in baskets to the fields intended for maize, spread over them and ploughed in. A top dressing is afterwards given when the maize has sprung up. For the rabi following a little manure is also ploughed in ; but the effect of that used for the maize lasts for the rabi, as it is not really ready when put on, and some more is spread over the surface when the wheat is two or three inches out of the ground. The winter collections of manure (November to March) all go for the sugarcane ; and they are generally in very fair condition, having been rotting for four or five months, and exposed to the rain. Top dressings are also added till the cane is about three feet high. This description will apply to irrigated and to dofasli Bét lands alike. Unirrigated lands in the Dháíá never get manure, as they are much too dry to stand it. The Western Jagráou and Jangal villages have a magnificent supply, which is at present wasted ; but will all be used when canal irrigation is introduced. The manure is rather inferior according to our ideas, as the most valuable part has been taken out ; but it has a great effect on the soil, and is much valued. It would be impossible to raise one or two crops in the níai land without it. The refuse of the city of Ludhiána is very fine manure. It is bought up by the Bét villages just under, in which there is some first rate market gardening done in what is really poor soil.

111. I have endeavoured in the preceding paragraphs to describe the agriculture of the district as a whole ; and to show the system on which the lands of a village are cultivated. From what I have said in para. 85 about the constitution of villages, it will be evident that nothing resembling a farm according to European ideas exists, as it does in other parts of the province where the land of a cultivation lies

Actual cultivation of a holding.

in a lump, generally round a well. The village is made up of a number of holdings owned by separate members of the community; and each owner has in his holding a share in every class of land situated in all parts of the village or subdivision. I have described the operations separately; but every proprietor has to distribute his time and labour over the various crops, which are of every description, growing in his lands. Thus in Samrála uplands a proprietary holding consists of about six acres of land, of which $3\frac{1}{2}$ (roughly) will be unirrigated, and $2\frac{1}{2}$ irrigated. Of the former again half will be under fodder for the cattle and half under the common food grains; while of the irrigated land less than one acre will be under cane and cotton, and the rest under maize and wheat. But it is not possible for a single man to work a holding ("láhua" or "katána"), as he could never alone take his own turn at the well, which requires at least four bullocks and three or four men at a time. In practice 20 or 30 acres are cultivated by a partnership, which may be temporary, the land of the several proprietors being separately owned; or the holding may be really a joint one, belonging to a family containing five or six able bodied men. This gives the result of large patches of cane, maize, &c., being grown, several fields being clubbed together for each crop. In the Jangal villages, where agriculture is in its simplest stage, things are different. The division of the cultivator's labour is easy enough, and the task of cultivation is very light. From July to November the cultivator is more or less busy between sowing and reaping the kharif, and preparing the land for and sowing the rabi. But with the rabi in the ground there remains almost nothing to be done till it is reaped; and after that absolutely nothing for some months. In Jagráon, where there is not much irrigation, the labour is also light. But in the highly cultivated villages of the east of Ludhiána and in Samrála the work of cultivating a holding is incessant, and wearying alike to man and to beast. There is no rest all the twelve months, except for a few days in the rains; and there is so much to do about the months of October-December that the cultivator often finds that he cannot get through it all; and loses his chance of sowing his rabi in time, or neglects some other operation.

112. I will now proceed to give an account of the various crops in detail. Sugarcane is grown in an area of 13,213 acres; but its importance is much greater than is indicated by this, for the value of the yield is about ten times that of an ordinary unirrigated crop: and the total annual value some Rs. 12,00,000. It is almost entirely grown for the manufacture of some saccharine product (called "kátha" cane); but in a few villages the "ponda" or eating variety is raised. Kátha cane is grown in unirrigated land of the Samrála Bét (where it occupies 12 per cent. of the whole area), and of a few Ludhiána villages; and at the wells in the uplands of Samrála and the eastern portion of Ludhiána, the best crop being, perhaps, that raised about

Maloud. It is of three sorts—"chan," a soft, juicy cane which grows to a considerable height, has a red colour and long joints ("pori"); "dhaul" does not grow so high, has small joints, and is of a green colour and less juicy; while "ghorru" is an inferior sort, with many joints and a great deal of leaf at the top, very hard, and yielding much less juice than the others. The first of these is the real cane, and the other two are mere degenerations; no one ever keeps a "ghorru" stalk for seed; and "dhaul" is only planted if there is not enough of "chan." The cultivation in the "Dháia" and Bét is much of the same description. Cane is sometimes the only crop in a field for two years, especially in outlying ones, where the supply of manure is limited. It may also be grown with the aid of a great deal of manure in land just cleared of another crop of cane, or of a rabi crop of wheat; but as a rule it occupies the land for three harvests, following a kharif of cotton. Cane is not grown in the fields next to the site, but generally at a little distance. It is always planted, if possible, in land that has been cropped with cotton; and in the Upper Dháia Circle of Samrála, we find that the area under the two crops is nearly the same. The rotation is generally—

YEAR.	RABI.	KHARIF.
First ..	Ploughing ...	Cotton.
Second ...	Fodder, &c. ...	Ploughing.
Third ...	Ploughing and Cane sown	Cane.

and back again to cotton, giving a cane, a cotton and a fodder crop with perhaps a little grain in three years. The cane field is selected next to the well, as the crop has to be kept alive during the hottest months, and always gets more frequent waterings than any other. The land is ploughed not less than seven or eight, and up to 20 times, the more ploughings the better. All the available manure has first been spread over the field, and is ploughed in. The planting is done from the middle of Phágan to the middle of Chet (March). The seed consists of joints ("pori") cut from last year's crop, which have been kept covered up in pits in the field. In planting them one man goes along with a plough and another follows, laying down the joints at intervals of six or eight inches in the furrow. The plough in making a new furrow covers up the former one; and the whole field is finally rolled. The canes spring from the eyes ("ánk") of the joint. About four or five canes will come of one joint. Then follow waterings at

intervals of seven or eight days in the uplands, and hoeings after each of the first few waterings. The fields are very carefully protected by stout hedges. In the Bét there are no waterings, and seldom any hoeings; and the fields are quite open. The cane in the uplands grows to a height of eight or ten feet, and when it becomes heavy, is protected by several stalks being tied together. In the Bét the height is only five or six feet, and this precaution is not necessary. There is altogether a great difference in the modes of cultivation, Dháia and Bét, due principally to the difference of natural condition, and partly to the different habits of the cultivators, those of the Dháia being industrious Jats and of the Bét apathetic Mahomedans, of the Rájput and Gujar tribes principally. The method of extracting the juice is much the same in both tracts. Cutting goes on all day in the field, each cane being stripped, and the flag at the top with the small joints immediately below it being removed. In the evening these small joints are separated from the flag (which is then used for fodder or for feeding the boiler furnace) and tied up in bundles for seed. The cane is carted to the "belna" or mill, which stands just outside the village site. The pressing is done in this "belna" or mill, the cane being thus passed in bundles between two horizontal wooden rollers, and the juice running into an earthenware jar set to catch it. In a corner of the enclosure of the mill stands the boiling shed; and the juice is taken into this and boiled in pans. In the "Dháia" the Jat requires no assistance in the boiling, and turns his juice into lumps ("beli") of "gur" or into "shakar," which he may dispose of that very day. In the Bét the money-lender has invariably advanced money on the crop, and his man does the boiling. The produce when boiled assumes the semi-liquid form of "ráb," which is taken in part payment of the debt. I need not here enter into an account of the manufacture of sugar from ráb, or of the relation between the money-lender and cultivator. I have already written a separate paper embracing the whole subject; and these details would be out of place here, but will find their place in an appendix.* Sugarcane is the crop invariably converted into cash, and may be said to be the revenue-paying one. It is very valuable, otherwise it could never have held its own so long, for it occupies the land the better part of two years; and in the Dháia the labour of cultivation is incessant. Bullocks stand the work at the wells and in the "belnas" for only a few years: and the cultivators are never tired of complaining of their hard life. These objections make it a dangerous crop to any but the most thrifty classes. The Jats keep out of debt because it is in them to do so: but the Mahomedan of the Bét will tell one that he is a victim of the sugarcane crop, and he is right to some extent, for he has not the qualities which would enable him to subsist while his cane is growing.

"Ponda" sugarcane is now raised in a good many villages under Ludhiána. It was formerly confined to two or three Araien villages; but the cultivation has spread. This crop requires a great deal of ma-

* Appendix XIII.

nure and constant attention ; and pigs and jackals are very fond of it. But the canes have a ready sale in the Ludhiána bazar, and the crop is worth at least from Rs. 100 to 150 an acre ; and is often bought for that amount as it stands by the green-grocers.

113. Cotton is sown during the months Chet-Hár (April-June)
 Cotton. in fields which have had a kharif or a rabi harvest. The best crops are raised in land which has enjoyed a fallow in the rabi ("sáuwe"). The yield is better because of the fallow, and also because the sowings are early. It is not usual to have cotton immediately after a rabi, and where this is done in Hár the yield is poor. The crop generally follows cane, as explained in the last paragraph. The number of ploughings required is not so great as in the case of cane, and three to four are sufficient. In the Dháa it is grown in the unirrigated lands of a few Samrála villages ; but mostly in the well lands, and in dofasi or niái fields of the Bét. Where grown at the wells irrigation is necessary before sowing, unless there have been stray showers of rain in April-June, as there very often are. Two or three hoeings are given. After the autumn rains the waterings are very rare. Pickings commence in October, and go on to the end of November, being eight to ten in number, at intervals of a week. The pickings are done by the women (at all events among the Jats) ; and the cotton and seed are separated by means of a gin or "belua." Of the seed part is kept for sowing, and the rest given to the cattle ("varéwan"). It is a favourite food for the well cattle in the cold weather, and for milch kine at all times. "Til" is often grown with the cotton. It is also very usual to run a plough through the field while the plants are standing, and sow barley, carrots, metha, &c., generally for fodder ; but there is very often a decent crop of barley caught in this way. A cotton field may have in this way three or four crops in it at one time. There are no varieties of cotton. The usual short-stapled sort of the Panjáb plains with bushes three or four feet in height is grown everywhere.

114. Maize is sown at the end of July (from the beginning to the
 Maize. middle of Sáwan) after three or four ploughings with a great deal of manure, the best crops being raised in the fields next to the site. It receives the usual number of hoeings (three or four), and springs up very fast, reaching a height of seven or eight feet and growing as well in Bét, irrigated and unirrigated, as in Dháa land, provided that it gets sufficient manure. The crop ripens in sixty to seventy days, and is reaped at the end of October and beginning of November. There are generally two to four cobs on stalk. Maize is, I think, the best crop of all for the cultivator. It does not require much labour in preparation, and few waterings are necessary if the rains are good. The yield is very great, the value of the crop being next to that of cane, while it has the advantage of a very speedy return. The zemindár lives on maize for some months, and it is a good, wholesome

food. The stalks are also very fair fodder, and last for some time. The ordinary maize of the Dháia has cobs about seven or eight inches in length, with a fair-sized seed of a yellow colour. A species known as "batálan" is grown in the Bét. It has a shorter cob and a smaller grain, but it is said to ripen in two and a half months to three of the ordinary maize, and for this reason the seed is used by the Dháia people when there has been a break in rains and sowings are late.

115. Wheat is grown in the unirrigated lands of the Bét and of a few Dháia villages; and at the wells every-

Wheat.

where. It is sown during October and November, as the cultivator has time for it; the unirrigated crops being taken first, so that the moisture be not lost. The unirrigated lands, where not manured, have received a number of ploughings in the cold weather, or rather ought to have, for the ordinary Mahomedan cultivator of the Bét seldom does his duty to the soil. In the manured lands of the Bét and the irrigated Dháia the crop follows maize, in which case the preparation consists of two or three ploughings; or, if the land has had a fallow, there have been winter ploughings as in the ordinary unirrigated lands. When the crop has sprung it receives in níai lands of the Dháia a top dressing of all the manure then available, and several waterings and hoeings. The waterings are at intervals of fifteen days at least. The crop is reaped towards the end of April, or the beginning of May. The grain is eaten or sold; and the straw used as fodder for bullocks.

The wheat grown everywhere is the bearded red variety common to the Province, and is called "Kanak," or

Varieties of wheat.

"Gheo," or "Lál Kanak." The grain of the Bét is held to be better than that of the Dháia (to a native's taste), as the flour is said to be more sticky when moistened and pleasanter in flavour. I suppose it is a more moist wheat, like the English. The varieties to which special names are given are uncommon, and only grown in irrigated land. They are :—

Mundi.—This is a beardless red wheat, with a slightly higher stalk and a larger grain than the common kind. The yield is said to be better; but the straw is hard and not good for fodder. The flour is much the same. *Dudh kháni* or *Dudhi* is a white wheat, also beardless, much the same in appearance as the last. The flour is very white, and much used by "halwaies" for making sweetmeats. The straw is said to be hard and poor fodder. *Phaman* or *Badkanak*.—This is a very tall variety. I have seen it growing to a height of four or five feet in good well land. The grain is large; but said to be hard and not good for flour, and the straw is refused by the cattle. The yield is superior to that of any other sort. I cannot say what foundation there is for the preference for the common wheat, or how much of it is due to prejudice; but the use of these varieties is not spreading.

116. The cultivation of barley does not differ from that of wheat.

Barley.

There are no recognized varieties, except a sort called "Cabuli jau," which is grown in places,

and has a whiter grain than ordinary barley. Barley is much hardier than wheat, is sown later and ripens earlier, being in the ground about five months to six of wheat. Wheat cannot be sown later than November; but barley will germinate, and give some yield even when sown as late as the end of December. When the moisture in the soil has dried, and there has been no fall of rain in October and November, the zemindar will go on in hope of showers as late even as Christmas; and if there is rain at this time, he will sow late barley (called "kanouji,") and get a very poor crop, which gives a yield, perhaps not one quarter of a good one, but still something to keep him alive. I have known sowings as late as January 10th; and, if the subsequent rains are heavy, the yield of grain may be a very decent one, though the stalks are never more than one to one and a half feet high.

117. Gram is not usually sown by itself. It appears to require a good deal of moisture to make it germinate, though the plant is hardy enough afterwards; and it is only in a year of heavy rainfall that a large area is sown with it alone. The people say that the crop depends entirely on the rain of Sâwan, *i. e.*, the earliest monsoon rains, and that, if these are scanty, however good the subsequent falls may be, the crop will come to nothing. The sowings commence from the middle of September and go on for two weeks only, as it is useless to sow it after the first week of October. It is reaped first of all the spring crops, early in April. Gram is not grown in the Bét, the soil not being suitable.

The great unirrigated crop of the Dhâia is a mixture of gram with either wheat or barley, sometimes with both, and called "berra" in all cases. It is sown in October, not later than the end of that month, in land that has had a year's fallow, and been prepared during the winter by ploughings. The seed is drilled in, and every eighth or tenth drill is sown with "sarson" or rape. The sarson ripens first, and is cut at the end of March, the rest being ready about April 10th. The reason for sowing two crops together is clearly that both of them are not likely to fail in the same season. The "sarson" is something over and above the regular crop of the field; and, if a success, gives a handsome return. In some years the wheat or barley is the better crop, and in some the gram; but it must be a very bad year in which both, as well as the sarson, fail. The "berra" is cut and threshed as one crop; and no attempt is made to reap the grains separately. The mixed grain is sold, and people seem to prefer the meal made of it, I suppose because it is cheaper than pure wheat and still has some in it; but it is easy to separate the wheat and gram by means of a "chhânnâ" or iron sieve, which allows the wheat grains to pass through and not the gram. But this is very rarely used as yet. Sarson, besides being grown in the "berra" fields, is also sometimes cultivated in irrigated patches as a single crop. Târamîra (*Brassica eruca*) rarely takes its place. The sarson is either made into oil in the yillago presses, or brought to market and sold in seed. Almost every field of

“berra” yields sarson too ; but in our crop returns and produce estimates the land is only shown as under the former, as it is impossible to estimate the areas and yields separately.

118. The kharif pulses are very numerous, the principal ones sown in the Dháia being “moth” (*Phaseolus aconitifolius*), “mung” (*P. Mungo*), másh (*P. Roxburgii*) with inferior varieties called “mungli,” “máhri,” &c. These are sown some time in July in land that has had a rabi crop, and reaped by the end of October. Light sandy soils are well suited to them, and a mixture of one or two of the varieties is the general crop. The yield of grain is seldom very good ; but the straw is very strengthening fodder. Except in the lighter soils, which will not bear it, the kharif crop of the uplands is a mixture of the millets and these pulses. The great millet is either sown wide, when the objects is to develop the heads for grain (“joár”), or thick with a view to the fodder (“charri”). The times of sowing and reaping are the same as for the pulses. Where, as in the eastern portion of the district, there is a great deal of irrigation, and the well cattle are dependant on the fodder raised in the unirrigated land, the crop is always the mixture of moth &c with charri, except where the soil is sandy, and only a pulse can be grown. The crop grows up very dense, the millet having a very small head, and never reaching more than a height of about four feet. The people begin cutting the whole as green fodder in August, and go on using it for two months till the crop has ripened. The heads of the charri are occasionally picked for the grain ; but generally the mixed crop is cut down and given without any attempt to get the grain of the pulses. It is intended that the cattle should get the grain as well as the straw ; for it would be a short sighted policy to keep out the former, as the cultivator well knows. In Jagráen tahsil there is not the same necessity for a strengthening fodder ; and very fine joár is grown. There is the same mixture of pulses ; but the millet seed is in very small amount, and the stalks come up at intervals and grow to a height often of eight or ten feet, and have very fine heads, which almost weigh them down. The pulses also have a fair yield of grain ; and only the straw and joár stalks are used for fodder. In the Jangal villages the spiked millet (“bájra”) sometimes takes the place of joár. In the Bét “charri” or fodder alone is grown, the soil not suiting the pulses of the Dháia. There is no yield of grain. “Másh” (called “máh”) takes the place in the Bét of “moth,” &c., but it is grown only in the new and moister lands adjoining the river. “Mung” is also grown alone or mixed with másh ; but charri is the sole kharif crop in the lands of the pukka Bét.

119. “Massar” (lentils) I have already mentioned as being sown in newly recovered Bét land for the first two or three years. The crop is cut for fodder ; or the grain is eaten as “dál.” It is only in the first year that it is grown by itself, the seed being usually mixed with barley. Barley and massar is the corresponding crop in the Bét to “berra” in the

Kharif pulses and mil-
lets.

Massar and Rice.

Dháia. An occasional field of ("alsi") linseed will be found in the Bét. *Rice* ("munji" "dhán") is grown in places along the river in completely new land. It is a very coarse sort, and the market price is about 30 seers a rupee. The whole area under it is only 2,500 acres. When a new piece of land turns up it is ploughed roughly a couple of times, the grass ("dib") often being left standing, and the rice sown. There is perhaps no crop at all; but generally a fair yield. There is no transplanting, and the crop ripens in forty days from sowing.

120. These are the principal crops, and the remaining ones may be

Miscellaneous crops.

disposed of briefly. "*San*" (*Crotalaria juncea*) is grown in the unirrigated lands in sufficient amount to make the necessary ropes for agricultural purposes. It is ready in October, and is cut and steeped in the village ponds, the process causing a most offensive odour. It is then taken out, dried in the sun, the fibres pulled apart and worked by the hand into thin ropes, which are again steeped and then beaten (skutched). These thin ropes are then twisted into others of the necessary thickness. "*Sankukra*" (*Hibiscus cannabinus*) is grown round the edges of cane fields sometimes. *Indigo* is grown in a few Mahomedan villages, principally in the Bét. The green crop is steeped, and the dye made into balls after the usual native method. *Poppies* are grown in a few villages for "post" and a catch crop of "*kangu*" or "*china*" is occasionally taken at the wells in a bad year when the price of grain is high. *Tobacco* is grown at the wells in fields which have borne a kharif crop. It is sown in plots at the beginning of April, is transplanted in a week or ten days, and is cut in May. It requires a great deal of manure and constant watering. The Mahomedan cultivators of the Bét (Aráien, Gujar, &c.) grow a great deal; but there is also some in the "Dháia." *Melons*, musk ("kharburza"), or water ("tarbuza") are grown in the Bét, in unirrigated land. The crop is sown in April, and the melons come into the market in May and go on through June. There is, of course, a very large demand for them in the city of Ludhiána; and the greengrocers ("sabzi farosh") buy them from the cultivator by the field, when it is known what the crop is likely to be. The price realized is sometimes very high, and is generally Rs. 20 to 30 an acre. The expense of the manure is considerable; but the crop is a paying one to the cultivator. There is a second crop of water-melons in the kharif, sown in July and picked in October-November. *Garlic* ("lassan") and *onions* ("piáj") are also grown after the rabi. In the Dháia the cultivator grows a few square yards of the latter for his own consumption; but in the Bét large fields are grown and sold to the greengrocers. "*Lassan*" fetches a high price, and is bought like melons by the field. *Pepper* ("mireh") is also grown in the Aráien and Gujar villages. All sorts of native vegetables are grown in the wells in the Bét, but I need not notice them in detail. They are "sonf" (*foeniculum vulgare*), "dhaníá" (coriander), potatoes, "Arabi" (the edible arum), "salgam" (turnips), "mulí" (radishes), "ajwain,"* "kíra" and "kákri" (cucumbers).

* "Ptychotis ajwain."

The cotton at the wells is usually followed by a green fodder crop of "metha" (fenugreek), "senji" (trefoil) grown alone or mixed with barley, or by a crop of carrots, which are largely eaten by the people themselves and also given to cattle.

121. The following is a calendar showing the ordinary round of agricultural work of the year; and it will be found to contain much of the information scattered over the preceding paragraphs.

No.	NAME OF MONTH.			State of Agriculture.
	Vernacular.	English.		
1	Chét ...	March-April ...		Cane planted up to 15th. Cotton sowings all through the month; also melons up to 15th. Wheat crop irrigated once; and if rain falls unirrigated lands ploughed for next rabi. At the end of the month sarson and then barley reaping begun.
2	Baisákh ...	April-May ...		All rabi crops ripe; gram, "berra," wheat reaped first in unirrigated and then in irrigated lands. Threshing begun. Cotton sowings and cane watered all through the month.
3	Jét ...	May-June ...		Threshing completed, and grain and straw stored. Cotton sowings and cane watered.
4	Hár ...	June-July ...		Cotton sowing completed by 15th, and cane watered. Rains commence by the middle or end of the month; and one or perhaps two ploughings for the autumn unirrigated crop given; and one in the land intended for the rabi : san sown, and moth, charri &c sowings commenced.
5	Sáwan ...	July-August ...		Maize sowings commenced, and all kharif sowings should be completed by middle of the month. Then the ploughings for the rabi commence, and three or four given. Kharif well crops watered if necessary.
6	Bládon ...	August-September...		Ploughings for the rabi and kharif crops watered if necessary.

No.	NAME OF MONTH.		Name of Agriculture.
	Vernacular.	English.	
7	Assoj ...	September-October	Rabi sowings begun in unirrigated lands. Gram from 1st to 15th, and then "berra."
8	Katak ...	October-November	Rabi sowings continued and completed, the irrigated lands last of all; and by the middle of the month kharif harvesting commences. Cotton picked all through the month. Kharif crops watered in these two months as necessary.
9	Magar ...	November-December	Late rabi sowings. Kharif crops threshed in first half of the month. Cotton pickings go on; and cane pressing commences towards end of month.
10	Poh ...	December-January	Cotton pickings completed, and cane cutting and pressing goes on. Rabi crops irrigated.
11	Mágh ...	January-February...	Cane cut and pressed; rabi crops watered. Lands ploughed for cane and for next rabi if rain falls.
12	Phágan ...	February-March ...	Rabi crops watered; cane and cotton sowings commence from the latter end of the month.

In an Appendix will be found a collection of sayings current amongst the villagers, which contain much practical wisdom, and illustrate many points on the agriculture of the district, giving the proper seasons for the various operations, &c. They would take up too much room in the body of the report.

122. The subject of fertility of the soil and the average yield of the various crops will be considered in the second part of this report, when I give the results of the experiments made during settlement operations.

The agriculture which I have described in the preceding paragraphs is of much the same character as it has been for the last century or two. With the increase of population the land has come to be more heavily manured and cropped, but the manner of tilling it has remained unchanged. No new staples have been introduced

within recorded memory. The agriculture is, I think, perfectly sound ; and it would not be easy to show a Jat how he could do better with the capital at his disposal. A better sugarcane mill may take the place of the present clumsy machine ; and improvements may be effected in the form of the plough ; but I do not see that much is to be done in the way of introducing new staples or manures. There are some points in which the people might be instructed ; but there are not many in the present system which could be pointed out as really faulty. A Jat would willingly adopt any real improvement within his means, as he is not prejudiced. For the ordinary cultivator of the Bét one has only to set up his neighbour the Aráien or the Hindu Jat of the Dháia as an example of what he might do.

European enterprise. European enterprise has not as yet obtained any footing in the district ; nor is it likely to do so, as there does not appear to be any opening.

There are a few gardens round the city of Ludhiána in which fruit trees are grown, but none elsewhere ; and the supply of fruit is derived from other districts. Even if the people had the inclination to plant such gardens, they could not be much of a success for the soil is not generally suited to the growth of fruit trees.

I have already (in para. 11) referred to the subject of arboriculture ; The roads under district management have good avenues of "shisham," "sirís," "kíkar," &c., and the Grand Trunk Road is also lined with trees in places. There are two plantations under the Forest Department ; but the absence of waste lands puts out of the question any projects for raising them in village areas. There is quite as much wood grown as the people require for ordinary purposes.

123. I now come to give some account of the calamities to which the agriculture of the district is exposed, and of these the most important is here as in other districts—drought. It will be evident from the general description of the physical conditions of the district, and that given of the agriculture in this chapter, that the effects of a failure of the rainfall on the various tracts are very different. The low-lying Bét suffers little from a mere deficiency of rain, for in the greater part of it, i.e. all above Ludhiána, the normal rainfall is high (30—27 inches), and the soil is naturally moist. On the other hand too heavy a fall often injures the crops. The annual floods of the river cover the country to a distance of one or two miles from its regular banks along the whole course of 60 miles ; and the percolation reaches much further. Pargana Nurpur, which is the lower half of the Ludhiána Bét, has a considerable proportion of irrigation, while the Jagráon Bét is all under the influence of the river. In the uplands of the Samrála tahsil there is 40 per cent. of irrigation, and in the

Calamities of season :
Drought and famine.

Arboriculture.

east of Ludhiána 25 to 30, the rainfall varying from 30 to 25 inches. In the south-western parts of Ludhiána (about Pakhowál) and in Jagráon tahsíl we have a rainfall decreasing from 25 to less than 20 inches, and the proportion of irrigation 15 in the former, while it is only 8 per cent. in the uplands of Jagráon. Finally in the Jangal detached villages the rainfall is 17 to 15 inches; and there is no irrigation. A failure of the autumn rains affects the whole of the uplands to some extent. In the highly irrigated tracts of the east the well cattle depend on the fodder grown in the unirrigated fields and on the grass; and a deficiency of fodder means that they will be much under-fed, while at the same time they are worked much harder than usual, for the kharíf well crops require more frequent waterings. These kharíf crops are much improved by rain, as well water only reaches the roots; but an average yield is obtained from them in a year of deficient rainfall. When the time for the rabi sowings arrives, if the rain still holds off, the wells are worked incessantly, and water taken to all fields within reach, sometimes to very great distances, in order to produce the necessary moisture for the germination of the seed. I believe that nearly 20 per cent. of the cultivation of tahsíl Samrála can be covered in this way, besides the 40 per cent. regularly irrigated. The supply of water in the wells is of course limited in most villages, particularly in such a season as that in which it would be used for this purpose; but the cultivator is willing to neglect his kharíf to some extent in order to insure a sowing of the unirrigated rabi. There is likely to be some rain in the winter, and the fields sown will then have a good crop without further assistance. But, if the rain is not sufficient for sowing, a large area of the stiffer soils must always remain uncropped, and the cultivator loses this; while probably one or two of his bullocks give way. He will generally have enough grain in store to put him over the bad season with the aid of what he gets from the land irrigated and unirrigated on which he has raised a crop; and he will sow patches of carrots, chini, &c., at his well. Carrots appear to be the great article of food on which the cultivator falls back on such occasion wherever wells work, and the praises of the vegetable are celebrated in the popular rhyme:—

Gújaran gujráli; chaja parbhat dí ári:
Báuháw, tangun sukha; kíte tid usáre.

A bad season, *i. e.* the failure total or partial of two harvests, for the rabi will never be much if the kharíf is bad, may or may not leave the cultivator in the money-lenders' books for the price of a bullock or for some grain, this depending on the state of his pocket and the amount of grain he had to start with. A second bad year, one in which the fodder dried up, and the wells had to be used for sowing the rabi, would be likely very seriously to cripple the resources of the whole population, and involve them in debt to a large extent. Such was the calamitous famine of 1783 A.D., but the conditions are much altered since then owing to increase of irrigation; and such an

event is not likely to occur even once in a century. In the western parts a failure of the autumn rain means the loss of both harvests over a large area of unirrigated land, although the wells can be used for sowing the rabi here also, and some villages on the Ferozepur border have wells which are used to a very limited extent in ordinary years, having been sunk as something to fall back on in a year of drought. But the whole area so protected is limited, and the loss of the fodder crops would be followed by a great mortality amongst the cattle. I am told that in 1860 and 1868, the last occasions on which there has been anything resembling a drought, the people from the Jangal began in August and September to swarm over the country in search of straw and other fodder, just as they have been doing this year. As the drought continued every one wanted to dispose of at least some of his cattle, and the price fell, till a good bullock would not fetch a few rupees. Then the cattle began to be turned out ownerless, and died all over the country. But the people themselves were well off. Most families will be found to have in store at any time the grain of two rabi harvests; and many of three or more, especially if the seasons have been good everywhere and prices low. The Jats watch the market very keenly, and sell what they calculate they can spare at the most favourable time. What suits the villager of these western parts best is to have good harvests here, a famine somewhere else, and the consequent high prices. Such was the combination in 1877-78 when famine prices followed very fair harvests throughout the district, owing to the drain towards the Deccan. But, even if the season has been a bad one in the district, most land-owners will be found to profit by famine prices, provided of course that the granaries have not been depleted in previous years; and I doubt if they ever will be again unless by two bad seasons in succession and the failure of all four harvests. The immense profits made by the sale of grain in the three years—1860, 1868 and 1877—has greatly encouraged the storing of it; and I believe that another year of famine prices would find the stocks in the houses of the agriculturists much larger than they have ever been before. If the succeeding year is a good one, the cultivator has probably more than recouped his losses by the profits on the sale of his grain, and can purchase cattle to make up for what has perished. But in all probability he had more to start with than were actually required for his simple agriculture, and can go on for a year or two with a reduced number. A second bad season would of course do injury, more or less according as the failure of crop was total or partial. There would be a further and more general loss of cattle; and the cultivator would have to keep all his grain for his own consumption. There has, happily, been no such combination under our rule as the complete failure of four harvests in succession; and, as within the next two or three years the distributaries of the Abohar and Bhatinda branches of the canal will have brought the means of irrigation within the reach of every village that requires it in Jagráon and in the south and west of Ludhiána, we may say that its occurrence has now been rendered impossible. When the irrigation from

the canal has been fully developed, there will be no part of the uplands with less than 25 or 30 per cent. of its area protected.

124. With this explanation of the manner in which the various

History of famines and
scarcities.

portions of the district are liable to be affected by drought, I will proceed to give such information as I have been able to collect about

the history of the subject. The earliest famine of which men talk is that of Sambat 1787 (A.D. 1730). The memory of it is preserved in the saying "sat-assiake mária hua," applied to a man who has got food, and refuses to feed a starving beggar; but I can learn no particulars as to how the people lived, or what was the extent of its ravages. There was drought in A.D. 1759 and again in 1770, but apparently no famine; and the effects were only felt for a few months. The memory of

Famine of Sambat 1840.

these visitations has been effaced by that which followed. The terrible famine of Sambat

1840 (A.D. 1783), called "chália," appears to have spared no part of Northern India, and this district suffered with the rest of the country. It began with the failure of the autumn rains of Sambat 1839, there being little or no yield in the kharif and following rabi harvests. Prices rose from Bhádon (Sambat 1839), and by Baisákh (Sambat 1840) wheat was selling at 20 seers katcha (8 seers packa) a rupee. Rain fell in Hár but not afterwards; and the kharif crops of Sambat 1840 all withered. In Kátak of that year wheat was at 8 seers katcha ($3\frac{1}{2}$ seers packa) a rupee; and, if we consider the difference in the value of money then and now, we may realize the extent of calamity from this. The rabi was not sown except at the wells, of which there were not nearly so many as now. In Chet Sambat 1841 there was rain, and grass &c. grew; and in Hár the usual autumn rains began. The kharif and rabi following were very good. The pressure of famine lasted nearly $2\frac{1}{2}$ years altogether, and the mortality must have been tremendous. Grain could not be bought for money; and people are said to have died with bags of rupees under their heads. All natural affection was lost sight of, and parents robbed their children of their food, and looked on to see them die. Many emigrated beyond the Jamna, where there appears to have been something to live on. People are even said to have been driven to cannibalism. The cattle died everywhere; and when the rain did come men had to drag the plough through the fields. The green crop was eaten whenever the heads were formed, and many lost their lives from sickness brought on by improper food. Famine was as usual followed by disease. The people appear to have been able to resume the cultivation of their land, and the country gradually recovered its prosperity; but the horrors of the "chália" will long be remembered. It is worthy of remark that not a single village was totally deserted in this famine. Proprietors abandoned their land here and there, and many must have died; but the mass of them adhered to their villages, probably in most cases because there were wells at which the survivors could eke out some sort of existence. The

history of no village, as far as I know, contains any allusion to its having been deserted at this time; and the few that date their foundation from a later period than the "chália" were settled by the ruler of the time in the surplus area of some old village contrary to the wishes of the rightful owners.

The next famine was in Sambat 1869 (1812-13 A.D.) The kharíf of Sambat 1868 and rabi following were poor, and fodder scarce. Rain fell at first, but stopped, and the kharíf of Sambat 1869 and rabi succeeding failed, except at the wells. Grain rose to 18 seers katcha (7 seers packa); and straw was not to be had. There was a tremendous loss of cattle, and oxen ceased to have any value, being given away for nothing or turned loose in the fields.

The autumn rains of Sambat 1870 were good, and prices fell. The loss of human life was not perhaps very great, and was confined to the poorer classes, laborers and artizans, in the towns and villages.

The history of the "nabia" or scarcity of Sambat 1890 (1833 A.D.) is as follows. Grain was selling at two maunds (packa) a rupee when it began. The autumn rain of Sambat 1890 failed; and the two harvests produced almost nothing except at the wells, where there were carrots, &c., as usual. The loss of human life and of cattle appears not to have been considerable; and the price of gram was never higher than 17 seers packa; but this was of course very dear for those times, and would mean eight or ten now. In Sambat 1894 there was a scarcity, but not of much severity. The people had not, however, recovered from the "ninety." Witness the couplet:—

"Nawe thon bache chour-ânwe ne máre.
Dine budal, ráte táre."

"Saved from the 90, succumbed to 94; there were clouds by day and starry nights."

Of the next scarcity, that of 1860-61, we have official information.

The account for this district is as follows:
Sambat 1917. The rabi of Sambat 1917 (1860 A.D.) was poor, the winter rains having failed; and the price of wheat rose to 34 seers packa by Baisákh. There was rain in Hár, but not in the following months; and the kharíf was sown, but withered. There was a great drain on the grain stores of this district caused by the scarcity in those to the south; and the price of wheat rose till it reached at one time seven or eight seers a rupee. The rabi was very poor, but did not fail entirely; and the rains of 1918 were plentiful. There was a great scarcity of fodder and a considerable loss of cattle; but none of human life from actual starvation, in the villages at all events. It was a famine in the "Bángar" country (Rohtak, Hissar, &c.), and numbers flocked northwards from those parts. Our people say "Kál Bángar thou upje bura," "a famine coming from the Bángar is bad." The stores of grain were sold at an immense profit, which

probably more than compensated for the loss of cattle. The scarcity of Sambat 1917 will be found to be the turning point in the fortunes of many agriculturists of the western and jungal villages. Most of them had grain in store; but the unlucky few that had not were compelled to incur a debt of which they have never got rid. Mortgages in Jagráon tahsil can be as often as not be traced back to the "17" ("satárah") or the following "25" ("panji"). There was some acute distress amongst the lower classes in the towns; but the whole famine expenditure appears to have amounted only to about Rs. 6,000; and, although a suspension of 3 per cent of the revenue was considered necessary, the balance was realized at once. Captain (afterwards Colonel) McNeile writes in 1861 that the money-lenders were complaining that the Jats had paid off all their debts and taken the grain trade completely out of the hands of the regular merchants.

The scarcity of 1869-70 was, as regards this district, of much the same character as that of 1860-61; but the harvests were better, and the injury done was confined to a not very considerable loss of cattle, and to debt incurred by individuals from this cause or from their having to purchase grain for food. Wheat went as high as eight or ten seers a rupee; but the people affected by this were as usual the artizans and labourers in the towns. There was on both occasions a good deal of immigration from the south of starving people. The whole expenditure on relief works was Rs. 7,000, entirely in the towns. On the other hand the mass of the agricultural population, at all events of the western parts of the district where the effects of famine ought first to be felt, profited greatly by the high prices as in 1860; and I believe that the advantages to them as a whole far outweighed the evils. Nominal suspensions to the amount of Rs. 2,500 were sanctioned; but recovered next year.

In the reports of 1877-78 Ludhiána figures as "unaffected." The harvests were very fair; but prices were run up to famine rates in consequence of the demand from the North-Western Provinces, Madras and Bombay. This was to the entire benefit of the cultivator, and to such as had stores of grain.

Thus we have the history of the last century as follows: A terrible famine with immense loss of life in A.D. 1783; acute distress in 1812, and distress in 1833 and 1837 felt by most people. But for the development of communications which took place after annexation, I do not think that prices would have been very high in 1860 and 1868; and it is probable that the gain to the agricultural population was greater than the loss in those years. There is, however, a very considerable portion of both town and village population who will always be affected by a rise of prices, the classes who subsists by labour paid for by a cash wage; and to these must be added the numbers of immigrants who are driven into this district by famine in the country to the south of it.

125. I will give next an account of some of the minor calamities of season and of the pests from which the crops suffer.

Minor calamities.
 "Agast" or "Agat" is a north wind which blows for a day or two about Bhádon 22nd (middle of September), and breaks the maize stalks, besides injuring in a less degree the cane and cotton. The name is that of a demon who is supposed to cross the country on his way from the hills to Ceylon, and spreads ruin amongst the crops in his course, which is generally only a few miles wide. His advent is followed by the appearance of the bird called "mamola" (wagtail); and is really the beginning of the cold weather. Witness the couplet :—

" Bhádon teri báis Lanka nun chari Agat,
 Nadia nír samlia; makhán nun pór gía hath."

" Bhádon by your 22nd day Agat sets out for Lanka; the streams and water become controlled; the butter hardens."

Frost does a good deal of harm (" Pála márlia" is the expression used) to the cane and to the late cotton (sometimes); as well as to the sarson in the rabi. It does not appear to affect the wheat and gram; but the wheat and barley when the grains are forming in the heads are very liable to be blighted (lodged?) by cold winds from the north or west, the east winds are always mild. This is called "bulla márlia;" and the people have no

Blight.
 very clear account to give of what happens. They say that they find some morning that the grain is blighted, and the heads turn yellow and wither.

Hail storms (" gola," "galla") occur almost annually somewhere or other in the district, either in the months of October or in March. The kharif or part of it is generally reaped at the time that the autumn storms come; but considerable injury is sometimes done to the pulses. The rabi always suffers severely from hail when it falls, the wheat and barley stalks being snapped, and the gram pods broken off. In a few days the crop gets a yellow withered appearance. A hail storm generally passes across some part of the district to a width of one or two miles, but the total injury done is never very considerable, only a few fields in any village being affected as a rule. Lightning does occasional injury to fields of cotton, pulses and san in the autumn.

Lightning.
Insects: Locusts.
 Locusts ("ahn, tid") appear at places every third or fourth year, and go across some of the villages in a line two or three miles wide eating up everything. Their appearance is generally in September-October (Bhádon-Assoj). Their ravages have never, as far as I can learn, been so extensive as to cause a general calamity; and the injury is usually partial, like that of hail storms. They have not appeared now for five

or six years. "*Sondi*" are green caterpillars which attack the gram and sarson stalks. Good rains in the cold weather will kill them; but if the rains are short, they

are most destructive to unirrigated crops, much worse than locusts because they are universal and come every year. They live in holes, and come out during the night to work. Hard soils suffer most. I have seen

"Kungi," in places at least half of the gram crop eaten by them. "*Kungi*," or red rust, is said by the natives to be caused by a tiny insect that appears on the wheat or barley heads when rain is followed by clouds. It affects the crops in Mágh-Chet when the ears are beginning to form, and covers them with a fine dust, yellow or red, under which the grain shrivels. General injury is done by "*kungi*" at rare intervals, the last bad year for it having been 1875. It often appears, but a few days of sunshine drive it away. Kungi affects irrigated as well as unirrigated crops. Young cane plants are attacked by a caterpillar called "*kansua*,"

Telia, &c. and full grown cane by small insects called "*tela*" (black) and "*punke*" (white). Tela also attacks cotton. Cane and cotton are cleared of these by rain, otherwise the juice of the cane becomes watery and poor. White ants ("*seonk*") attack the roots of the unirrigated rabi crops in all soils, and do a great deal of injury in some years. The cure for them, as for all other

pests, is rain.

Field rats also do some harm in light soils, but have never come to be much of a pest. "*Sondi*" caterpillars and white ants do much more injury than anything else to the unirrigated crops.

Jakals eat the maize all over the district, and of the destruction caused by pigs in the villages under Ludhiáná I have written in para. 14. Herds of deer

wander all over the fields, but they are not so numerous as to cause much injury. People put up in places sticks with cloth attached to scare the deer off (called "*darne*").

Scarecrows, &c.: watchmen. Platforms ("*mauna*") are erected on the trees or on stakes stuck in the ground for the purpose

of watching the maize and joár fields, and boys sit on these screaming and firing mud pellets from slings ("*gopia*"). A rude fiddle made of half a gourd with a piece of gut stretched across it, is used in the Bét for frightening the pigs from the cane. The noise may be heard at a great distance. The cultivators also light fires along their fields for the same purpose, and have to watch all night. In most villages a rákhi or watchman is appointed, whose duty it is to wander about the fields and see that cattle do not stray amongst the crops. If cattle are caught trespassing, the owner is fined a couple of seers of grain, which is paid to the watcher, who also receives an allowance from the whole village at harvest time. Watching at night is not usual except where, in places, the habit of pilfering from the fields has be-

come common, or in the neighbourhood of Harni villages or of the towns.

126. There are only two or three large zemindari estates in the district, and the cultivation is almost entirely by the proprietors themselves. Our returns show 21 per cent. of the cultivated area as in the hands of tenants, but the greater part of this is held by men who own other land. The following are the proportions of the various classes of tenants shown in Appendix II—A with this report :—

How held.	Per cent. of total cultivation.
With occupancy rights	5
At will by proprietors or by tenants who have occupancy rights in other lands	9
At will by tenants who have no such rights	7
TOTAL	21

When a proprietor has any spare land, more than he can work, this is either let to a co-sharer who has not enough land of his own to support himself,* or an agricultural partnership is entered into.

The subject of rates of rent will be found fully discussed elsewhere (in Part II). Rents are fixed for the year about June 15th (Nimánia); but earlier and separately for cane and cotton. For the *kharij* crops (cane, cotton, maize, charri, moth, &c.) a cash rate

on the crop is almost invariably fixed by agreement, and paid when the crop is ripe or nearly so, not beforehand. The reason is that if the crop is a bad one a liberal owner will sometimes reduce the rate fixed. The rent is calculated on the local measure, which is the “katcha” bigah in the east, and the ghumáo or kanál in Jagráon and in most of the Bét. The rent-rate is mentioned, and the amount to be paid is calculated on the known area of the field; or the ground is paced or measured with a rope. The cash rent only covers the harvest, except that sometimes a rate is fixed so as to include the wheat following the maize; but more generally a separate rent in kind is taken for the wheat. The land returns to the owner at once when the crop has been cut. Thus land is rented at the Nimánia for “charri” only; and the crop is taken. The proprietor must arrange for the winter ploughings

*Or to a person who has no proprietary rights.

necessary for the crop of next year, and he disposes of the land at once with this view ; but the agreement has really effect from the next Nimánia, seven or eight months after, and would be for the *rabi* after that. In some villages, where the land is all much of one quality

Bigah rates.

and the cultivation not very good (Mahomedan Rajput villages mostly), the proprietors will rent their land at so much all round on the *katcha bigah*. This saves trouble, to escape which is the great object in life of a Mahomedan land-owner. A field is often rented for the cultivation of a single

Rents for holdings.

crop like cane, charri, &c. ; but, where a number of fields are rented in one holding ("láhna"), the rent takes the form of this general rate per bigah, or "zabti" rates are agreed on for certain crops and kind rents for others, the tenant raising the crops that suit him best ; or again a lump sum ("chakota") is fixed to be paid by the tenant as rent of the holding for the whole year, he having liberty to raise what crop he likes. A holding rented in any of these ways will consist of all sorts of land.

Rents in kind are taken for the *rabi* crops, rarely for cotton, and

Rents in kind.

almost never for other *kharif* crops, except in Jagráon tahsíl. The straw is divided as well as the grain, and the proprietor takes a somewhat smaller proportion of the former than of the latter. The usual rates are half to two-fifths for unirrigated lands with one-third of the straw ; and for irrigated, one-third of grain and one-fourth straw. "*Bataie*," or subdivision of produce is a very simple process in this district. The tenant cuts and threshes the grain ; and on an appointed day the proprietor comes to the heap for his share. The grain is measured out in a large earthen-ware jar (called "chátti" or "máp") which holds about a *katcha* maund (17 seers packa), and the straw in arm-fulls. The proprietor then removes his share. If a *faqir* or other holy man appears, he gets a small portion, of which no account is taken. It says much for the intelligence of the people how entirely they have broken away from the very elaborate system of "*bataie*" which prevailed forty years ago when the revenue was taken partly in kind. There are none of the elaborate calculations of allowances to the various menials &c., such as are kept up in less advanced parts of the province ; and there are also none of the superstitious observances attending the division of the produce. Perhaps the most important feature of all is the absence of the special weighman of the shop-keeping class. The allowances to menials I will notice later.

127. If a proprietor does not care to rent his land, he will enter

Agricultural partnership.

into a partnership with some cultivator (called a "sánjhi"). The "sánjhi" may contribute only his labour, in which case he is called "ji-de-sánjhi" ; or he may also contribute cattle, when he is called *sánjhi* simply. The share of produce that the *sánjhi* receives would depend on what he contributes, each man and each beast counting as a unit in the calculation. Thus

a proprietor may have three bullocks and the *sánjhi* one; and they would together make up two ploughs in unirrigated lands. The *sánjhi* would in this case get two out of six shares in the produce or one-third; and the proprietor would probably pay the revenue and supply the seed, &c.: but this is a matter of agreement, and the terms vary a good deal. Sometimes several proprietors club together for the better working of their well land, jointly irrigating the fields of each in turn.

A "*bítia káma*" is a farm labourer kept by a proprietor, generally because the latter cannot for some reason (age &c.) work his plough. The "*bítia káma*" gets Re. 1 to Re. 1-8 a month, and his food and clothes from the proprietor; but has no interest in the produce.

128. The most numerous of the village menial class are the *chamárs*, of whom I have given some account in para. 56. These people have to perform certain tasks, of which the principal is the repair of all leather appliances (well buckets, seed-drills, &c.) and of the cultivators' shoes; and they have also to plaster the public gates; to collect grass and keep watch when any officer of Government comes; to carry bundles to the next village on such occasions, &c., &c. They have also to remove all dead cattle; and they receive the carcases and skins of these. The *chamárs* are paid full price for all new goods, shoes, buckets, &c.; and occasionally cultivate a piece of land, either alone or in partnership with a *zemindár*. They receive generally an allowance of grain per plough (about 30 seers); also some cotton and *gúr*. These allowances are also (rarely) made on the total yield (about one seer per maund). The *chamár* families are generally divided amongst the sharers, say one to every ten houses of the latter.

The *takhán* or carpenter has to execute all repairs; and also to make small things like goads, yokes, &c., but for new ploughs, pitchforks and other implements he is paid in cash, the cultivator supplying the wood. He has a good deal of work about the wells, and a great deal at the presses ("*belna*") in villages where sugarcane is grown.

The *lohár* or blacksmith makes the plough-share, the cultivator supplying the iron, and also repairs all iron work. Sometimes one man does the work of carpenter and blacksmith. The *takhán* and *lohár* receive allowances either on the plough or on the total produce (from a quarter to one seer per maund).

Where there are *chuhras*, they are only used for calling the people together, or giving notice to any one who is wanted ("*bulári*"). The allowance is small, generally one-sixteenth to a quarter seer in the maund.

The *jhinwar* or waterman has to supply baskets for the cane press, and gets a very small allowance (about one-sixteenth to one-eighth seer per maund). He also supplies water at marriages, but is paid for this specially.

The *naie* or barber performs personal services to the cultivator, cuts his nails, shaves him, &c., &c., and receives
Naie. much the same as the *jhūwar*.

The plough ("hal") on which they are generally calculated is such a variable measure that I have not given the allowances to those menials and artizans stated on it; but, roughly speaking, where all the *kamins* receive a full allowance, they absorb one-twentieth to one-sixteenth of the gross produce. This is according to the administration papers of the villages; but the practice is very different. Under the Sikhs, when the revenue was taken in kind by the servants of the ruler, a heap was set apart for the village servants (two to two and a half seers in the maund); and this was divided amongst them according to their recognized shares. But with our fixed assessment this system could not continue, except where a proprietor takes rent in kind from a tenant. There has been a tendency to break up the constitution of the village in regard to these menials, the action being mostly on the part of the proprietors, for the *kamins* are generally much too degraded to wish for any change, and are in the power of the proprietors completely, not having even the option of changing their abode when too hard pressed. The result has been that the proprietors attempt to cut down the allowances and make new terms with the *kamins*. In many administration papers a condition has been recorded that the relation of the proprietors to the *kamins* is liable to annual revision, and in some villages there are no customary allowances or services at all; and, when a cultivator has any work to be done by one of the class, he pays for it in grain or cash. In many villages too the proprietor will not now allow the *chamār* to have the skins, as the price of leather has risen very high in late years; and money is to be made out of them.

B.—Live Stock.

129. From what has been written in Chapter I as to the absence of grazing ground, it may be inferred
 Enumeration of cattle. that the district is not adapted for cattle-breeding. The District Returns of Live Stock for the last year show the following details:—

Cows, bullocks and buffaloes	...	...	270,238
Horses and ponies	...	...	1,815
Donkeys	...	...	7,430
Sheep and goats	...	...	68,505
Camels	...	...	1,811

We had an enumeration made by the *patwāris* in 1879, which gave the following results:—

Draught cattle (buffaloes and bullocks)	...	...	137,665
Milch kine	...	...	108,851
Young stock	...	...	96,983
Horses and ponies	...	...	3,155
Sheep and goats	...	...	50,408
Camels	...	...	1,849

The cattle in the towns did not come into our enumeration ; and for these we ought to add about 18,000 to the milch kine and a good deal to the sheep and goats. I fear that I cannot claim very much accuracy for our figures ; but they are probably not far out. The District Returns are an estimate by the tahsildárs.

130. Bullocks are universally used for agricultural work ; and he must be a very poor man who can only afford a buffalo, this animal being considered the sign of poverty in a cultivator. The draught and plough cattle. The bullocks are either bred in the villages, or imported from the cattle-breeding tracts to the south, Háuasi &c. ; being brought up in droves by dealers who go from village to village, generally a few weeks before the Baisákhi and Diwáli Fairs, on their way to Amritsar. There are no cattle fairs in this district. It is difficult to determine exactly what proportion of the cattle used in agriculture are bred in the district ; but I believe that between three-fourths and half of those in Samrála are imported. In Jagráon there is still some grazing land left, and the greater part of the cattle in use are probably bred in the tahsíl ; but there are also large purchases from dealers. The people of the Jangal are very fond of buying cattle, using them for the few months during which agricultural operations go on, and then selling them, thus saving the keep for several months. The home-bred cattle are said to be better for the work than those imported because, apparently, the former are stall-fed all their lives ; while the latter having been raised on grazing, feel the change, and cannot do well on the straw which they have to eat for a great part of the year. A bullock costs from Rs. 20 to 25, if two years old ; and Rs. 40 to 60, if of full working age. At two years old he is yoked in the plough ; and works in this till he is four, when he is put to the well. Bullocks go on working till twelve ; but at that age they are old, and they do not live beyond fourteen or fifteen. In Samrála and the highly cultivated parts of Ludhiána they do not last so long on account of the constant hard work in the sugarcane mills and at the wells. Where (as in Jagráon) the people keep carts, the quality of the draught cattle is superior, and one sees some very fine bullocks in those parts, much higher prices being paid, and the animals being better looked after. In the Bét the cattle are of a very much inferior stamp, as they are only required for the plough. They cost Rs. 15 to 20 each, and are bought anywhere.

The area that can be worked by a pair of bullocks depends on a variety of circumstances. Thus in the Bét the cattle are very poor and cannot cover much land ; and besides this a great part of the area in the upper Bét is cultivated twice every year. In the uplands it is the wells that make the difference, and, of course, the superior cultivation at them. In the Bét it appears from the returns that there is a pair of bullocks to every six or seven acres of cultivation ; while in the eastern and highly cultivated uplands the average is eight or ten acres ; and in jangal it is about seventeen to a yoke. The following are the details for some of the assessment circles :—

CIRCLE.	No. of cattle (plough and well).	Area culti- vated.	Average per bullock.	Per cent of irrigation.
Bét Samarála	5,250	16,185	3	1
Bet I, Ludhiána	6,332	21,237	3	5
Upper Dháia Samrála	25,560	107,750	4	42
Do. Ludhiána	20,557	95,100	5	22
Pawádh Ludhiána	6,057	27,332	5	29
Jangal	7,254	59,208	8	.....

131. In the months of Baisákh, Jét, Hár (April-June) the cattle are fed on dry straw and grain, the new straw Food of draught cattle. of the *rabbi* coming in by the first of these months. This is the worst time for them, and the working cattle could not get on without the ser or two sers of grain that they get daily. In Sáwan and Bhádon there is good grass in the waste, if any is left, and in the fields intended for the next *rabbi*, where it is allowed to grow till the time of the Sáwan ploughing. The cattle are grazed on this, and it is also grubbed up and given to them in the stall, the grain being stopped. Cutting grass is the work in Jat villages of the women, who are out all day in the fields, collecting bundles. The cattle have very light work in these two months, because the wells are not working; and between this and the new grass they put on condition. In Assoj and half of Kátak (September to October) green fodder, either "charri" alone or mixed with "moth," &c., is given; and this is perhaps the best time of the whole year for the cattle. At the end of Kátak the "charri," &c., is cut and stored; and during Magar, Poh, Mágh, and Phágun the dry stalks of charri, maize, &c., are given, and, if necessary, straw. The straw is either white ("safed bhusa") that of barley and wheat, or "missa," i. e., of moth, másh, &c., coloured straw. The latter, especially the moth straw, is said to be very strengtheuing. In the month of Chét (March) patches of green fodder are grown at the wells, either "metha," "senji," &c., or carrots; and green wheat or barley is also given, but not commonly in an ordinary year.

132. The number of milch cattle is not more than sufficient to supply local wants. There is no attempt to keep cows specially for the sale of milk or of "ghi"

Milch kine.

except in a few Gujar villages mostly close under Ludhiána; and in these the milk is generally bought up by people from the city. Our enumeration would show a cow to every five or six of the population. In the Bét buffaloes and cows are generally kept; and in the Dháia, cows. The milk is boiled and churned in the usual manner in a "chátti" of earthenware by means of a wooden staff ("madhání") twirled round in the hands or by a string. The people of the house use the butter-milk ("lassi"), which forms a very important part of the cultivator's daily food; but the "ghi" is generally sold or kept for the occasion of a marriage, &c. The whole supply is not, however, more than sufficient for the consumption of the better classes in the villages and in the towns.

133. A good deal of loss is caused annually by cattle-disease, and attempts are being made to disseminate information on the subject. The names given by the people are so various; and their accounts of the causes often so fanciful, that it is not easy to identify the different diseases that prevail. Great mortality occurs from over-work and insufficient food, especially in a year of drought. In the eastern parts of the district nearly the whole of the *kharif* unirrigated crop is grown for fodder; and a failure of the autumn rains means that the cattle will get no grass or green "charri" in the autumn, and no dry "charri" in the months of the cold weather; while they are at the same time deprived of their usual rest of two or three months, and have constant work at the wells. It is not possible that cattle should go all the year round on dry straw and grain. The first effect of drought is to reduce the condition of the cattle, and to render them very liable to the ordinary ailments, if they do not actually die of over-work and starvation. There was a considerable loss in this way in 1861 and 1868 (*see* paragraphs 123 and 124), but not in any other year since the regular Settlement, as far as I can discover. Besides being sadly over-worked and often insufficiently fed, the cattle in the eastern villages are very badly housed. They are taken home inside the village, and penned up in houses a few feet square, while their masters are enjoying the fresh air on the roof of the house. In the western parts they have much better accommodation, and get plenty of fresh air.

"Sirak" and "bawa" are terms used to denote any form of epidemic disease; also "marri". I can identify only two true epidemic diseases amongst cattle, of which the first appears to be either anthrax fever or malignant sorethroat. It is called "gal gotu," and is very deadly in its effects, and also most infectious, attacking buffaloes and bullocks alike. The affected beast gives up its food, and a swelling forms on the throat. This appears to burst internally, and the majority of animals affected die the day after the appearance of the first symptoms. No attempt is made at a cure; but it is said that, if purging sets in the second day, the animal will recover, unless it dies of exhaustion in ten or fifteen days. The disease is always present somewhere in the district,

Diseases prevalent: "Gal gotu."

and when a village becomes infected, it will lose fifty to hundred cattle in a few days. Recoveries are rare. No attempt is ever made to prevent the spread of the disease by isolation, burying carcases, &c. It is said to be carried from one village to another by carrion-eating birds, storks in particular.

Foot and mouth disease is called "monkhar" or "morkhur"

(also "rora" and "chápla"), and is common. Foot and mouth disease. It is never very deadly; but the cattle affected are useless for a long time. It appears to be very infectious, and crops up here and there almost every year. The first object to which attention should be directed is obviously the prevention of the spread of these epidemics from village to village and inside of villages; and it will, of course, be very difficult to induce the people to do anything for themselves in the matter.

Of the ordinary ailments, "ogu" appears to be epilepsy, or paralysis, the beast affected generally falling down and dying in a short time. "Tilla" and "hallu" are the effect of cold, and attack buffaloes only, the symptom being difficulty of respiration. "Mokh" is purging in any disease. I do not know that rinderpest is amongst the diseases which attack the cattle of the district; but the whole subject requires more study than I have been able to give it. Cattle are often lost by over-feeding with "methe" or other green fodder after having had poor food for some months. When there is a break in the rains, and the "charri" is stunted (called "sokha") cattle getting into the field and grazing, fall down and die. This is called "patha lag gaya," and is apparently choking. I have consulted in writing this paragraph "The more deadly forms of cattle-disease in India," and also Dr. Rahím Khán's book.

134. The people of the Dháia are not fond of keeping horses,

Horses. considering them a useless expense. The distances are generally short, and the people prefer walking. Of the lambardárs even it is only one in a hundred who owns any sort of an animal, or has ever been on one. Our enumeration shows about three horses or ponies to each village. In the Bét, where there is a little grazing, the Mahomedans have a few weedy ponies; but these are of a very poor breed. In the villages to the south-west of the Jagráon tahsíl (Mánoke, &c.,) there appears to be something like a better breed of horses; but these belong to the better classes, and there are after all very few of them. Government stallions are kept at Ludhiána (2), and at Jagráon (1). In one or two of the villages to the south-west of Ludhiána the proprietors are engaged in the horse trade (Burj Latán, Alike, Dhangar, &c.) They buy young animals all over the country, feed them up for two years, and sell them at Batesar and other fairs across the Jamna. This trade is not of any importance.

135. Camels are kept by the people of most of the Jangal villages, and by those of a good many others scattered over the district, where it has become

Camels,

the custom to do so. It is very common for an enterprising zemindár to purchase two or three camels with any savings that he has, and to start in the carrying trade. The Jats are very fond of turning an honest penny in this way; and, where carts will not work as in the Jangal villages, camels are used for bringing up the grain to market. The Cabul campaign of 1878 is said to have nearly cleared the district out of camels. I know of one large village in the Jangal in which there were formerly a good many; but when I visited it in 1880 there was not a single one left; and, what was worse, the people said they did not intend to keep any more. Since then compensation has been paid; but I doubt if confidence has been restored, and I am afraid that, if Government should again have need of camels, it will not get many from this district. Compensation to be effective ought to follow immediately after a loss, for the ordinary rate of interest or profit that a zemindár expects is 25 per cent. per annum.

136. Sheep and goats are returned as sixty to seventy thousand in number. They are kept in every village, the goats for their milk, and the sheep for their wool. They belong to no special class of the community, and require no separate mention here. Donkeys and mules are used by kumhárs or brick-makers. There are very few pigs. Fowls are not to be found except, in Mahomedan villages, and there they belong to low caste people, generally chuhars. There are ducks and geese in many villages along the Budha, and a large number are reared in the old "cháoni" or former military bazaar. These find their way to Kasauli and Simla, and there is rather a busy trade in them.

C.—Trade and Commerce.

137. The rural population of the district is not engaged in any particular manufacture or industry. The menial classes and artizans of the villages make sufficient clothes, shoes, earthen dishes, &c., for the use of the cultivators. Weaving is always done for wages, the wool or cotton being supplied to the weaver, who gets paid for his work. Coarse cloth "khaddar," &c., sometimes finds its way into Ludhiána from the villages, but there may be said to be no separate weaving industry out of the city. In a few villages local artizans have established a reputation for some special manufacture, such as Lalton and Sahna, for dishes of brass and "káshi" ware; Raháwan, for locks and other iron-work, and also for stamping clothes; Samrála and Dherru, for iron-work. The towns of Máchiwárah and Bahlolpur are famous for their "susi" cloth, and the former also for its jewelry. The District Returns of industries give us the following

General statement of trades and industries.

details :—

1	2	3	4	5	6	7	8	9
	Silk.	Cotton.	Wool.	Other Fibres.	Paper.	Wood.	Iron.	Brass.
Number of mills and large manufactories ...	...	...	...	...	(Jail)	...	...	...
Number of private looms or small Works ...	{ 3 }	(400) 486	(500) 2232	(85) 169	...	(200) 2445	(50) 1608	(23) 44
Number of workmen in large works ...	...	...	...	...	74	...	...	...
Ditto ditto small ...	3	4,096	2,232	169	...	2,445	2,008	44

	10	11	12	13	14	15	16	17	18
	Build- ing.	Dyers &c.	Leather.	Pottery &c	Oil pressing	Pash- mina.	Carpets.	Jewelry.	Other manu- factures.
Number of mills and large manufacture ...	...	...	...	...	...	...	...	...	...
Number of private looms or small works ...	(200) 362	(80) 459	(200) 3,310	(50) 1,385	(200) 2,069	(900) 960	(2) 49	(100) 789	(300) 958
Number of workmen in large works ...	...	...	...	...	...	...	...	...	...
Ditto small ...	387	458	3,310	1,385	2,069	960	49	789	1008

I have entered in brackets in each column the number of the works that belong to Ludhiána city. The greater part of these entries are of the village weavers and artizans, (takhán, lohár, kumhár, mochi, &c.) The manufactures of Ludhiána I have reserved for notice in the account of that town.

138. The principal manufactures for export are the "gur" and "shakar" (raw sugar) made by the cultivators everywhere in the Dháia from the sugarcane; the "khand" or "bura" refined, made at Máchiwárah and in its neighbourhood, and the cloths of Ludhiána. I have already in paragraph 112 given an account of the manner in which the cane juice is boiled into "gur" or ráb; and for further details I would refer to the separate note on sugarcane, which appears as an appendix to this report. This boiling is rather a part of the cultivation of the cane than a separate manufacture; but the process by which the ráb is turned into "bura" and "khand" is the work of a separate class. An account of the "kháunchi" or press in which the "ráb" is strained and refined, and of the process and various products, will be found in para. 8 of the note referred to. There are about 70 "kháunchis" in

Máchiwárah, and 30 more scattered over the Bét belonging mostly to Khatrias, but also to Bánias, Suds and even Jats. The outturn of each press I have estimated at upwards of Rs. 2,000 value in sugar (bura, khand) and treacle (sirah); and in a good year for the trade, when sugar is dear, the contents of a "khánchi" may be worth Rs. 3,000.

139. It is not easy to write of the trade of the district apart from that of the country about; but the course that it takes is roughly as follows.

Course and nature of the trade of the district.

The surplus produce of the western villages, consisting of gram (alone or mixed with barley or wheat) and the autumn millets and pulses, is brought up to the line of railway for export from the district, or finds its way into the eastern villages for consumption there. Very little of the "gur" produced in the eastern parts is consumed in them; and most of it is bought up on the spot by trading Jats from the Jangal or Málwah country, and taken away in carts or on camels, none of it going by rail. There is no demand for it from the direction either of Lahore or of Calcutta, as those parts have their own supply. The sugar ("bura" and "khand") of Máchiwárah and its neighbourhood is bought up on the spot in the same way as the "gur;" or is brought to the railway at Ludhiána, and finds its way northward, as it is not made beyond the Biás and is in great demand with the sweetmeat makers of Amritsar, Lahore, Multán, &c. There is a very considerable import of sugar, both "gur" and "khand," from the Jullundur Doáb also, especially into the Jagráon tahsil from the neighbourhood of Nakodar. Most of the cotton of the eastern parts is also exported; but does not generally take the railway on account of bad packing and consequent high rates of carriage. It is either taken back by the trading Jats in their carts, or carried by merchants in hired ones to Ferozepur, whence it goes down the Satlej in boats. There is also an export of wheat from the eastern villages, the cultivators living on the inferior grains, some of which (maize, masar, &c.) are produced in the tahsil; but there is also a considerable import of gram, pulses, &c., from the west to supply the place of the wheat. The principal imports into the district are English piece-goods and iron from the south, and salt from the north. These come first to Ludhiána, and thence find their way over the country to the south and west of the railway. There is also an import trade in brass dishes. The "pashm" trade will be referred to in the notice of the town of Ludhiána.

140. The trade from the the west is entirely in the hands of the Jats, who bring the grain in their own carts, and dispose of it themselves either at Ludhiána to the regular grain merchants, or in the villages. A Jat would not part with his grain on the spot, even if it were the custom for the merchants to go about the country, for he expects to get a better price at Ludhiána; and his cattle would be idle if he did not employ them in carrying. The return trade of sugar, cotton, &c., is carried by the carts that bring the grain, for these seldom go back empty; and

Trading classes.

in such transactions the regular merchant has no share at all. I have explained elsewhere that the Jats of the unirrigated tracts to the south-west had a great deal of spare time, which they devoted to trade; but that those of the east were tied down to their villages. Nearly all the "gur" and "shakar" sold in the district is bought up by the trading Jats from the cultivators. The trade in the finer sugar products (khand and bura) made in Máchiwára and its neighbourhood, is entirely in the hands of the mercantile classes. A cultivator from Samrála tahsil may make an expedition for three or four days with his cart in search of grain when prices rise; but he cannot get far, as his crops would suffer. The cotton is either sold to some Jat who visits the village, or is bought up by the petty local traders who keep it till the regular dealers come round, as they generally do to the larger towns and villages once a year. The grain on coming to Ludhiána is purchased from the Jats by the regular grain merchants, mostly men who have come as representatives of firms in Delhi, Munzaffarnagar, Meerut, Saháranpur, &c. There is also a considerable proportion of residents engaged in the trade.

141. The district returns show 11,659 carts belonging to people of the district; but I think that this includes the ordinary carts used for agriculture. We have entered in the village note books the number of carts "working for hire," that is those going to Ludhiána and beyond it with loads of grain, &c., ("dasáwarwála"); and the total of these entries is 5,564 distributed as follows:—

Samrála	...	...	...	310
Ludhiána	...	...	...	2,881
Jagráon	...	...	...	2,373

This return is probably not far out. It will be observed that there are very few in Samrála; and those of Ludhiána all come from the south-west. The "dasáwar" or trading cart is a development of the ordinary field cart. I am told that twenty or thirty years ago, when the carrying trade was in its infancy, carts of the size now generally used were almost unknown. When the people began to make trading expeditions they fixed to their carts a wooden frame, wider at the top than below; and lined this with the old stalks of the sugarcane, cotton twigs, cloth, &c. But an ordinary cart of this sort, drawn by two or three bullocks, could only carry fifteen maunds (packa) of grain; and it was not long before the advantage of widening and lengthening the carts was seen; and they are now, at least most of those that come from the west, of a very superior pattern, drawn generally by five bullocks, and capable of carrying forty to fifty maunds of grain. The frame work of the sides is very strong, and lined with "tát" (called "tapar") or matting made of "san." Over the top is kept a thatch of "munj" reeds; or, if the owner can afford it, a thick carpet of wool, called "khar," woven for the purpose. The latter is a perfect, and

the former a partial protection from the rain. A first class cart will cost with all its appliances Rs. 100 ; and five bullocks, Rs. 250 to 300. Of course there are still a great many carts working which are not of the first class. Along the metalled roads the carts go easily, and they can cover 20 miles, or two stages in 24 hours ; but they have generally considerable distances along ordinary district roads before these are reached, and it requires at least the five bullocks to drag them even slowly through these. On the Ferozepur road one or two of the bullocks are generally to be seen tied up behind as a reserve. The heaviest loads come from the Ferozepur district (Moga and Zira), as the country to the south of Raikot is so very sandy that not more than about 30 maunds can be brought up to this place. A metalled road from Raikot to Sahna would be a great benefit ; and I hope that some day arrangements may be made with the chiefs through whose territories it would run.* The Jat cartmen either devote the whole of their time to carrying or only what they can spare from agriculture, which are the busy months of the grain trade. In the former case, the cartman is either a member of a family who have a joint holding, or he mortgages his land to another cultivator, getting a lump sum down for the use of it, which he is always able to repay. The grain carried almost invariably belongs to the man who owns and drives the cart, for the Jats will not work for hire, or carry for dealers. The cart is filled partly with the grain grown in the holding to which the cart belongs, and the load is made up by purchase in the village, or in others about.

Camels come direct to Ludhiána from the Jangal villages by the unmetalled roads, carrying grain ; and return with "gur," salt, &c. They are useful where the roads are particularly sandy, and only a small load could be brought on a cart. A camel load is about six to eight maunds. Donkeys are used for bringing grain, "gur," &c., from short distances into Ludhiána, eight or ten miles. A donkey carries $1\frac{1}{2}$ to 2 maunds.

142. It is impossible to give any accurate estimate of the extent of trade of this district. The Ludhiána railway station is the centre of trade for a very large tract of country, embracing most of the Ferozepur district, and a great part of the territory of the protected states ; and any attempt to determine how much of the grain trade coming along the Ferozepur and Kotla roads belonged to this district would be mere guess work. The cotton from the east also for the most part comes from Amballa district, the centres of the trade being Koráli and Morinda ; but Samrála tahsíl contributes something. The number of carts coming in this direction is never very large, the busy time being February to March. On the other hand the press of traffic on the Ferozepur road is sometimes tremendous. It is pretty constant, the slack months being July-September, when the bullocks are generally sent out to graze ; and the busiest, May-July, when those

* Perhaps the boundary road of the Bhatinda branch of the Canal, when thrown open to the public, will supply the want.

who engage in trade in addition to agriculture are all on the road, and the granaries are all open. In May and June the road from Dákha to Ludhiána is one long line of carts. Information is available as to the amount of grain that enters the municipal limits of the town of Ludhiána, which embrace the railway station, and also as to the amount that takes the rail at this place; but it is not possible to collect any as to the trade between the Jats of the west and the cultivators of the eastern villages. The carts of the former straggle into the villages in great numbers, the owners sell their grain where they can, and then collect loads of "gur," cotton, san, kikar and other wood for rafters, anything that will sell down in their own country. The carts never return empty. In disposing of their grain they may first try Ludhiána; and, if not successful there in getting a good price, go on to the villages, and even find their way into the hills sometimes. Much might be written on the subject of the wheat and other grain trade; but I fear that it would unnecessarily lengthen this report to do so, and separate inquiries are being made in the matter.

143. I must reserve for the second part of this report an account of the variation in prices of agricultural staples, the value of land, and rents, subjects which might find a place here.

A simple money wage is paid only in Ludhiána and the other towns. In Ludhiána masons and blacksmiths earn, if paid by the day, Rs. 10 to 12 a month; and carpenters a little more, Rs. 12 to 15. The rates are slightly lower in Jagráon, Raikot, &c. A common coolie carrying bricks, mud, &c., is paid $2\frac{1}{2}$ to 3 annas a day (Rs. 5 a month) everywhere. There is usually a good deal of work for coolies in carrying grain from the serais, "mandis," &c., to the station. This is ordinarily done in hand carts worked by a few coolies together ("rerí"). In the busy times of the trade four or five annas a day may be earned in this way, the payment being by weight. A number of men of the same class earn their living by grubbing grass in the neighbourhood and selling it in the city. These coolies are of all classes, agriculturists (Jats and Gujars) who have been driven to the work by the scarcity of the land, village menials, Kashmirís of the city, &c. As there are only single looms and no factories, wages for weaving are almost unknown. An apprentice gets his food and Rs. 1 to 2 a month from his master. A weaver will earn not more than two annas to three annas a day, purchasing his own material, and selling the piece when ready.

In the villages, carpenters and masons, if employed by the day, got their food and four or five annas. Labourers at reaping time receive a bundle of crop as their wage; but it is seldom that such men are employed. An account has already been given of the manner in which the village servants are

paid by the harvest. A coolie doing any odd job, such as plastering a house, gets his food and one to one and-a-half annas for the day's work. Weavers are given the raw materials, and are paid by the piece.

144. The unit of cloth measure is the "gírah," the width of the first three fingers, sixteen girahs going to the "gaz" or yard. In the "gaz" used for pashmínah there are said to be only $14\frac{3}{4}$ "girahs." The "gaz" is two cubits ("háth"), i.e., twice the length from the elbow to the points of the fingers.

The scale for weight is as follows :—

37 paisa mansuri=1 seer katcha.
40 seers katcha=1 maund katcha.

The "mansuri paisa" is the old copper coinage of the country. The "katcha" scale is used everywhere; and the whole of the grain trade is done in it, even in the shops of Ludhiána, no other being used. The katcha maund is at Ludhiána 17 of our standard seers. It varies slightly through the district, this being a remnant of Sikh times when every ruler had his own weight. A Jagráon maund is about four seers (katcha) less than that of Ludhiána; and one of Pakhowál something smaller still. Weighing is generally done with a ten seer (katcha) weight, called "dasérah," which has a Government stamp on it. Almost every agriculturist has a weighing balance ("takri") of his own. A "máp" or earthenware vessel is used in the field for finding out roughly the amount of grain; but, in selling, the balance and weights are always used. Milk is sold and bought by the seer; but it is generally measured in a "gadwa" or brass vessel of known capacity. Oil is also sold by weight, and it may be said that measures of capacity do not exist.

145. The measure of area has been the subject of much inquiry, and of a good deal of correspondence. The Emperor Akbar fixed one standard bigah for the whole empire, viz., a square of which each side was a chain. The chain was 20 "ghattas," each ghatta being 3 "Iláhi gaz." Thus 3 Iláhi gaz=1 ghatta, 20 ghattas=1 chain. The ghatta I do not find mentioned in the Ain Akbari, and I could not before account for it. The "Iláhi gaz" was Akbar's standard of linear measurement, and is somewhat less than ours, so that the "ghatta" is $2\frac{3}{4}$ of our yards. The Sikhs introduced their own land measures, of which mention will be made hereafter. The imperial bigah was restored as the official standard in our settlement of the villages acquired in 1835, and in the whole district in 1850; but the people have not adopted it. They know it very well, but they say that it bears a certain relation to the local measure. There is no connection between the gaz or "ghatta" on which it is built, and

the pace on which the people always fall back. The ancient measures of the country are the ghumáo and the bigáh (katcha). The latter is the standard of Hindustán or the Cis-Sutlej country; and the former appears to be in use all over the Panjáb proper, and it has also partly spread in the Málwah. In the uplands of this district the ghumáo is used in the greater part of Jagráon and in the Jangal villages; and the bigáh in the rest. In the Bét the ghumáo prevails, except in a small piece of country about Matewárah. The Bét tract was all in the Jallandhar Doáb at one time, and brought the Panjáb measure with it when the river changed its course, the exception mentioned above being caused by Sudha Singh introducing the use of the bigáh in the new villages which he founded, so as to have one standard for the whole of his territory. It was not in the power of the rulers to make the people adopt a new measure; but they could fix the standard of that measure. The scale of the ghumáo is as follows:—

3 Karams (double paces) each way=1 Mandla.
 7 Mandlas=1 Kanál.
 8 Kanáls=1 Ghumáo.

But generally the ghumáo is said to be four katcha bigáhs. A katcha bigáh is 20 karams each way. The karam, however, is a very varying quantity, and it was here that the difference came in. The rulers had constant necessity for using a measure either for the land on which cash rates were charged ("zabti"), or for "kankut" (appraisement of the crop); and there were in every petty state some persons whose pacing was recognized as the Government standard. The "karam" would be fixed by the ruler at so many "chappas" or hand breadths (16 to 18); and the pacing was done to suit this. In the more highly cultivated eastern villages the "karam" was smaller and that of the "Kheri" iláqa, adjoining Ambálla, was recognized as 16 chappas; while in Jagráon the karam was 18 chappas. This difference of measures has remained in force, and the katcha bigáh of Jagráon is about two-fifths; while that of Khéri is two-sevenths, or less, of the standard official bigáh.

The scale of the Katcha bigáh is.

20 Karams \times 1 Karam = 1 Katcha biswah.
 20 " \times 20 ... = 1 Katcha bigáh.

I may say here that we have finally adopted for future use a katcha bigáh, $\frac{1}{3}$ rd the old pukka bigáh, measured by a chain of 20 karams, the karam being 37 inches, and the chain 95 feet. This is a good average for the district, and fits into the old standard.

146. I have already (para. 4) given an account of the navigation, ferries, &c., of the Satlej. There appears to have been a considerable amount of trade Communication by water.

carried down the river in country boats; but the opening of the Railway in 1870 has completely stopped this. The Abohar branch of the Sirhind canal has been constructed for navigation between Rupar and Ferozepur, and boats will soon be started on it. It is not possible to say what use will be made of this for traffic.

147. The S. P. and Delhi Railway enters the district from Philour by a bridge over the Satlej; and runs through it to a distance of about 35 miles in a south-west direction. The principal stations are Ludhiána, Sáhnewál and Khannah; and there are two or three smaller ones, either in this district or in adjoining territory. The first named of these is a very large and commodious one; and new goods sheds are being constantly erected. There are generally several hundred waggons waiting to be loaded; and in the busiest seasons trains are constantly leaving. The Sáhnewál and Khannah stations pick up a fair amount of traffic at times; and the former is likely to increase in importance. A bazaar is springing up in the village. A branch line along the canal to Rupar was made by the Canal Department and has just been given over to the Railway Company for working. We have also in prospect a line from Ludhiána to Ferozepur.

148. The district is much better off than most in the way of metalled (kankar) roads. There are 125 miles of them, the whole area of the district being only 13 square miles. The principal metalled roads are the Ambálla and Lahore road (*via* Philour), and the Ferozepur road. These are under the P. W. Department and kept up by Government, while the District Committee maintains the others: (1) from Máchiwárah *via* Samrála to Ludhiána (26 miles); (2) from Ludhiána to Maler Kotla (so much as is in this district, 14 miles); (3) from Dákha on the Ferozepur road to Raikot (14 miles). It is also intended to connect Samrála and Khannah, which will give a metalled road between that station and Máchiwárah. Part of the plan has already been carried out. The greatest amount of traffic is along the Ludhiána-Ferozepur road, which carries more than all the others together. Next in importance is the road to Maler Kotla, and the Raikot road is not much behind this. The Ambálla road is now scarcely used for wheeled traffic; and along the Samrála road there is a fair amount.

The principal unmetalled roads are: (1) the old road along the high bank, connecting Ludhiána with Ferozepur and with Rupar. This is now used by travellers only, as the sand is very deep and wheeled traffic is not possible. (2) There is katcha road from Máchiwárah through Sáhnewál and Pakhowál to Raikot and thence on to the Jángal. This is not much used. (3) A katcha road connects Samrála with Morindah. This joins the Kalka-Ambálla road; but it is not much used, as carts go more easily the longer way by Amballa, the whole distance being metalled. (4) A katcha road runs through the Bét from Ludhiána to the

town of Ráhon in Jalandhar and another is the old road direct from Ludhiána to Ráikot. (5) The only road remaining to be mentioned is one from Ráikot through Bassian to Jagráon; and from thence to Sidhwan on the Dháia.

These roads are all maintained by the District Committee. They have been indicated on map No. I accompanying this report.

149. The Ferozepur and Ambálla roads are a good deal used by troops marching in the cold weather, and there are encamping grounds at Jagráon, Dákha, Ludhiána, "Duráha-ki-Sarai" (in a slip of Patiála territory) and Khannah, with the usual sarai and supply house at each. There are several large private Sarais in Ludhiána city, and one built by a benevolent native in Jagráon. There is a fine old imperial Sarai within a few miles of Khannah and on the Ludhiána road. It is called Lashkari Khán's, and was built in the time of Aurangzeb; but it is quite out of place now, and never used. There is no traffic to speak of along the Ambálla road on account of the railway; but the Jagráon and Dákha encamping grounds are always full of carts, ekkas, &c. There are also encamping grounds with supply house at Kohára and Samrála, on the Samrála road, which is now very rarely used by troops, but was formerly the high way to Simla and the hill stations from the Ludhiána cantonment.

150. There is a regular dák bungalow at Ludhiána (with a khánsámah &c.), and this is very much used by Europeans who are passing through from Ferozepur or have business here. There are district (or police) bungalows at Máchiwárah; at Kohára and Samrála on the Kálka road; at Khannah and Sáhnewál on the Ambálla road; at Dahlor on the Maler Kotla, and at Dákha and Jagráon on the Ferozepur roads; but these are very poor (except that at Kohára), being in most cases the "burj" or corner of the tahsíl building or of a sarai. The old Residency House at Bassian, built in 1838, is still kept up with its gardens and grounds, which cover an area of 70 to 80 acres. Although a good part of the building has been pulled down, what is still left is too much to be kept in good repair. It is a pleasant place to spend a few days at, as the locality is one of the most healthy in the district. There are Public Works Department bungalows along the Ferozepur and Ambálla roads at Khannah, Pindori, (near Dákha) Jagráon, which have fair accommodation and are available for district officers. There are canal bungalows at distances of ten miles along the branches of the canals; but these are generally occupied by the officers of the Department or by subordinates. The position of the roads, encamping grounds, bungalows, &c., has been indicated on map No. I accompanying this report. The following is a statement of the recognized routes and stages with the accommodation &c. for travellers to be found on each:—

Route.	Halting place.	Number of miles.	REMARKS.
LAHORE TO AM- BALLA, GRAND TRUNK ROAD.	Duraha-ki sarai, Patiāla terri- tory.	13 (From Ludhi- āna).	Encamping ground with supply houses, Road bungalow; also old Imperial serai, still in use.
	Khannah ...	26	As above, only the sarai is of our time and has a "burj" or room for Europeans.
LUDHIANA TO FEROZE- PUR.	Dākha ...	12	As at Khannah, but Road bungalow one mile further on.
	Jagrāon ...	23	As at Khannah, also Road bungalow one mile further on. Tahsil faces encamping ground.
LUDHIANA TO KALKA.	Kohāra ...	12	Encamping ground (seldom used) and supply house with small sarai. Also a combined Police and Dis- trict bungalow.
	Samrāla ...	20	As above. Also head quarters of Tahsil.

The first halt on the road to Lahore is at Philour in the Jalandhar district.

151. The mail to Ferozepur goes by horse dāk; and there is also a Government bullock train, and a horse Postal arrangements &c: dāk for passengers, not very efficiently telegraph. maintained by a contractor. There is a district dāk carried by runners between Khannah and Machiwārah; Ludhiāna and Dāhlon; Jagrāon and Rāikot. Towards Lahore and Amballa the post of course goes by rail. There is a Government telegraph office at Ludhiāna, and Railway offices along the line.

CHAPTER V.—ADMINISTRATIVE AND FINANCIAL.

152. The executive and judicial staff at the head quarters of the district consists at the present time of a deputy commissioner, a judicial assistant, a district superintendent of police, a civil surgeon, and three extra assistants (one being in charge of the Treasury), besides a tahsildár and munsiff.

From the time of the constitution of the district up to 1866 it was divided into four tahsils; Samrála (also called at one time Sarái Lashkari Khán), Ludhiána, Pakhowál and Jagráon; but in 1866 the Pakhowál tahsíl was broken up, and a few villages added to Jagráon, while most of them were attached to Ludhiána. There are now three tahsils, of which one has its head-quarters at Ludhiána, and the others at Samrála and Jagráon, each with the regular staff of one tahsildár, one naib, one munsiff and their establishments. The following statement shows the respective sizes of the tahsils and the village revenue staff attached to them :—

TAHSIL.	Area in acres.	Revenue (khálsa and jagir).	Number of Patwáris.
Samrála	184,584	308,586	83
Ludhiána	434,039	511,802	138
Jagráon	263,539	271,657	79
TOTAL	882,167	1,092,045	300

The kánungo agency for the supervision of the patwáris consists at present of one sadar kánungo, and one kánungo and naib for each tahsíl; but this staff is likely soon to be strengthened. The Ludhiána tahsíl has a larger revenue than nearly half of the districts in the province, and from a glance at the map it would appear as if the grouping of the villages was very awkward, those of the Jangal lying much nearer to Jagráon than to Ludhiána. But the whole of the Maloud pargana, which includes the villages about Maloud and also the detached ones referred to above, is, with the exception of two or three assigned to other jágírdárs, held in jagir

by the family of the Maloud Sardárs, the land revenue of their estates being Rs. 85,077. The revenue and cesses are ordinarily paid by the lambardárs to the jágirdárs themselves; but the collections of the Ber branch now go into the tahsíl direct, as the estate is under the Court of Wards. *The normal arrangement is a convenience to the people and lessens the land revenue collection work of the tahsíl materially.* Besides this, when the Pakhowál tahsíl was broken up in 1866,* the heads of the three branches of the Maloud family were invested with criminal, civil, and revenue powers, and also created sub-registrars each within the area of the jagir held by the branch which he represented. The Bhai of Bágrian was also invested with similar powers in the isolated village from which he takes his name. The Ber Sardár is at present a minor; but in any case it is evident that, if the jagirdars had exclusive jurisdiction in their own villages, the arrangement would be of great assistance to the district staff. The work actually done by these courts last year was—

JAGIRDAR.	CASES DISPOSED OF.		Documents registered.
	Civil.	Criminal.	
Maloud 	134	22	46
Ramgarh 	210	79	132
Bágrian 	21	11	.....

The tahsils are subdivided into parganas, of which there are in all 19 [see map No. I], but this division is merely a relic of Sikh rule, and serves no useful purpose. It represents roughly the political arrangement under our predecessors; but this meant nothing more than that, when the Sikhs took possession of the country, it was divided between the various chiefs; and the divisions were continued under us, although they were merely the result of a scramble. At annexation the country was found to be partitioned into "iláqas" or collections of villages, each held by a chief; and at the Regular Settlement these were doubled up in some places, and in others preserved as separate parganas, with a very unequal result. Thus Khammah pargana contains 118 villages, and has a revenue of Rs. 1,79,969; while Umedpur has 12 villages, and Rs. 14,414 revenue. These parganas have not been retained in the new Settlement; and I do not think that any subdivision of the tahsíl is really necessary for ordinary revenue work, as, except in the case of Ludhiána, the tahsils, though highly assessed, are of small area, and not too large for administrative purposes. But, if it be thought advisable to have a subdivision,

* This is a mistake I find. The powers were given in 1860.

the foundation ought to be the natural features of the country (which have been used for our assessment circles), and the parganas should be as far as possible of uniform size.

153. The following is a statement of the civil and revenue litigation of the year 1878 :—

CIVIL CASES DECIDED BY					REVENUE CASES DECIDED BY		
District Courts.	Tahsildárs.	Munsifs.	Unpaid Courts.	Total.	District Courts.	Tahsildárs.	Total.
752	537	7,280	358	9,105	618	674	1,292

I give no later figures because settlement operations have been going for the last five years. Compared with the adjoining districts of Hoshiárpur and Jálandhar this cannot be called very litigious.

The above statement gives an average of one civil case per annum to every 68 people; but, considering the extent to which joint interests in property prevail in this country, and the number of parties that may be concerned in a single case, a comparison between this proportion and that given by the returns, at all events of European countries, would be misleading. The number of legal practitioners settled in the district is steadily increasing, and these are retained by the parties in most cases of any importance. I have already noticed the litigious spirit of the Awáns and Hindu Jats. The Jat villagers of the Jagráon tahsíl in particular are always ready to rush into our courts; and, once a case has been started, it is fought out to the bitter end. It is generally a point of honour with them to take their cases up to the highest court of appeal that they can; and very large sums of money are spent in disputes where the value of the property is really trifling.

154. The criminal case work of the district is thus disposed of by the various officials and others exercising magisterial powers (figures for 1878) :—

Criminal courts.	work	and	
District courts	...	...	1,266
Tahsildárs	...	...	686
Unpaid Tribunals	...	...	800
Total	...	...	2,752

I have already referred to the powers of the Maloud and Bágrian Sardárs. There are two honorary magistrates in Ludhiána, Shahzáda Nádir, son of Sháa Shujaul Mulk, and Ahsan Sháh, a merchant, the former of whom has jurisdiction throughout the tahsíl, and the latter

in the city. Out of 800 cases above, the Shahzáda decided 608, mostly petty of course. There are no other honorary magistrates.

Police.

155. The regular police force of the district is composed of:—

District Superintendent.	Inspectors.	Deputy Inspectors.	Sergeants.	Constables.
1	2	11	57	457

There are ten “thánas” or police stations—seven of the first-class at Ludhiána, Jagráon, Ráikot, Dahlon, Sáhnewál, Khannah, Máchiwárah; and three of the second class at Sahná, Dákha, Samrála (see Map No. I). Each station has a cattle-pound attached to it. There are police posts at intervals along the Ferozepur, Samrála and Amballa Roads; and the first of these is patrolled, as it was a favourite beat of the Hárnis and other criminal tribes, who used to steal from passing carts, ekkas, &c. The police duties of the Ludhiána city are performed by the regular force; but in the other towns and in all villages, there are chokidárs, one or more, according to the number of the population; while, in the case of some small villages, two or three are doubled up, and have one man appointed for them. The total number of this branch is 796. The chokidárs are paid in the villages Rs. 36 per annum, which is collected by a rate on the houses, and disbursed by the tahsildárs. In the towns (except Bahlolpur) they get Rs. 4 a month; and jemadárs, Rs. 6; and are paid from octroi.

156. There is a district jail at Ludhiána, in which short-term convicts are confined. The average number of prisoners during the last year was 266, exclusive of persons detained in the lock-up and for debt.

Jail.

157. I do not think that the people of the district have a predilection for any special form of crime, most of the serious offences coming under the heads of theft and burglary. The Gujars in the Bét do a good deal of cattle-lifting. The tribes registered as criminal are Hárnis, Gounemárs, Sánsis, Baorias, and punitive posts are maintained on their account in six villages with a total strength of 24 men. These are now drawn from surrounding districts, with a view to having the habitual criminals known wherever they are likely to go. The depredations of these people are seldom carried on in their own district, and they usually go great distances in the Province and out of it in search of plunder, getting away from their villages in spite of all precautions, and although their absence is punished with imprisonment. The total number of these criminal classes by the police registers is 2,394, including men, women, and children, most being Hárnis. The Hárnis and Gounemárs were settled down under the Sikhs in six small villages of Jagráon and Ludhiána, where they own the land; and the others have now fixed

Forms of crime: criminal tribes.

residencies in a few villages ; but it is evident that all four tribes were originally gipsies, foreign to the country, and that for generations they wandered about committing petty thefts, begging, and living as they could. It appears impossible to break them of their habits. Where confined to villages, they are a pest to their neighbours, and the crops adjoining their lands require constant watching. They are very poor cultivators themselves. The Hárnis possess a slang, of which the following words are specimens :—

Nakhár	=	theft.	Poh	=	to bury.
Bhásri lagána	=	to commit burglary	Chetra	=	rupees.
Khara	=	{ any Government official.	Tilkin	=	shoes.
Kutba	=	{ a constable or stranger.	Dhotin	=	a woman.
Katera	=	a Jat.	Táke	=	clothes.
			Kharot	=	a lock.

158. The following is a statement of the income, Imperial and Provincial, from all sources. As the re-assessment of land-revenue has come into operation from last *Kharif* harvest, I take the figures for this and for all cesses on it by the rent-roll of 1883-84. The other details are the actual realizations of the past year.

Land-revenue with tribute or commutation			
money on <i>jágirs</i> , and zaildárs' allowance	..	9,24,231	
Famine Insurance Fund...	... ..	23,000	
Road, School and Dák Funds	... ..	27,605	
License tax ... ..	... ..	18,485	
Excise ... ..	... ..	48,501	
Stamps ... ..	... ..	1,42,040	
Registration ... ..	... ..	6,000	
Ferries ... ..	... ..	30,795	
Miscellaneous ... ..	... ..	10,643	

Total, Imperial and Provincial, income ... 12,31,300

The commutation money paid by the *jágirdárs* (Rs. 19,366) was fixed shortly after annexation as an equivalent of the services which the petty chiefs were bound to render to the paramount power, furnishing levies, &c. It is generally at a rate of from 2 to 4 annas a rupee of the *jágir* revenue; but sometimes at the pay of so many horsemen or footmen. The whole subject will be noticed in greater detail in Part II. Under "Excise" the details are:— Rs.

Spirits	... ..	10,320
Drugs	... ..	38,181

Of the former, 952 was on European, and the rest on country spirits; while of the income from drugs, 35,320 is returned as from opium and preparations of opium. All the ferries of the Satlej within the three tahsils are managed by the officials of this district, and the receipts under this head are really for two districts. Under "Miscellaneous" have been included the receipts from all kinds of Government properties, the largest item being on account of the sale

of grass (*sarkánah*, and also for grazing) along the roads and on the encamping grounds; also fees from cattle-pounds &c., &c.

The District Fund income is Rs. 69,000 on the new assessment. It is administered by a committee, appointed from amongst the leading members of the agricultural community in the method followed before the passing of the Local Boards Act; and the expenditure is on the usual objects. Some sixty miles of metalled roads have to be maintained from this source, and the expenditure on them is one of the heaviest items; but the nature of the country is not such as to render necessary any other great undertakings in the way of public works, and the rest of the funds are available for such purposes as education, sanitation, &c. The Municipal Committees, of which there are six, will be noticed separately under the towns which they represent.

Octroi. The total octroi income on the average of the last seven years is Rs. 74,070, and of the last year Rs. 93,764.

Total taxation. The income of the jagirdárs, exclusive of the tribute is, Rs. 1,58,237 and Rs. 1,19,206 are raised for the payment of village officials (*lambardárs*, *patwáris* and *chokidárs*). The total of all these items is Rs. 16,69,807, levied in a district with a population of 6,18,835, giving Rs. 2-11 per head of the population. It is not meant that the whole of this taxation falls eventually on the people of the district; and there are other forms of indirect taxation, such as the salt duty, which do not come into the account.

159. I have already given (in paragraph 84) an account of the educational establishments of the whole district, which I need not repeat here. Those of the Municipalities will be mentioned later in the account of each town.

There is a civil surgeon at Ludhiána, with a native assistant in charge of the dispensary and of other work. There are branch dispensaries at Jagráon and at Máchiwárah, supported from Municipal funds; and native *hakíms* are paid in Raikot and Khannah.

The following are details for the last year about the dispensaries:—

NAME OF DISPENSARY.	Cost of maintenance.	NUMBER OF PATIENTS TREATED DURING THE YEAR.	
		In-door.	Out-door.
Ludhiána	Rs. 6,450	562	23,368
Jagráon	2,255	149	8,414
Máchiwárah... ..	2,043	154	7,567

160. Ludhiána is an out-station in charge of the chaplain of Ecclesiastical. Amballa, who pays an occasional visit. The old cantonment church, a square, unsightly building is still standing, and was used till recently; but it has now been condemned, the roof being pronounced unsafe. The old cantonment cemetery is crowded with tombs of more or less hideous design, and is still used.

161. The Head-quarters of the first division of the Sirhind Canal, which at present covers the whole length of the main line and both branches (Abohar and Bhatiuda) in this district is at Ludhiána. The Head-quarters of other departments. The whole canal is under a Superintending Engineer at Amballa. The Grand Trunk Road, and the district works along it are in charge of an Engineer at Amballa (Provincial works). The telegraph office is under the Superintendent of Telegraphs, Amballa; and the post offices under a Superintendent stationed at Ludhiána. The two forest plantations are under the Assistant Conservator at Philour.

162. It is necessary that I should leave the whole subject of land-revenue, and the fiscal history of the district to the second part of this report. Revenue.

163. The fort at Ludhiána is garrisoned at present by a company of a native regiment from Jálándhar, Military. under the command of a European officer. It is in the Amballa military division. There are a few volunteers, part of the Rupar Company of the Panjáb Regiment, and a rifle range.

CHAPTER VI.—TOWNS.

164. The following statement of the size of the villages and towns is taken from the Census Returns (1881). Size of villages and towns.

Less than 200 inhabitants ...	200 to 500	500 to 1,000	1,000 to 2,000	2,000 to 3,000	3,000 to 5,000	5,000 to 10,000	10,000 to 15,000	15,000 to 20,000	20,000 to 50,000
140	318	243	119	31	4	2	.....	1	1

Municipalities.

165. THE TOWNS WHICH HAVE A MUNICIPAL COMMITTEE AND OCTROI ARE—

TOWN.					POPULATION.
Ludhiána	...	...	...	...	44,163
Jagraón	...	...	...	...	16,873
Raikot	...	...	...	...	9,219
Máchiwárah	...	...	...	...	5,967
Khannah	...	...	...	...	3,988
Bahlolpur	...	...	...	...	2,842

166. Ludhiána is the principal town and the head-quarters of the district. It is situated on the ridge just over the Budha nála, or former bed of the Satlej, and about six miles from the present course; and lies on the Sindh, Panjáb and Delhi Railway, and the Grand Trunk Road (Delhi to Lahore), the distance from Lahore being by these 116 miles. It is also connected with Ferozepur by a metalled road of 72 miles length.

The town was founded in the time of the Lodi Emperors, on the site of a village called Mírbota, the date recorded being 898 Híjri (A. D. 1481). The founders were Yusaf Khán and Nihang Khán Lodis (see paragraph 22), or perhaps the latter alone; and there is no reason to doubt the generally accepted origin of the name "Lodiána," although this has been corrupted into the present form "Ludhiána." The situation selected was a slight eminence on the south bank of the Satlej, commanding the passage of the river, on the high road from Central Asia to India. The history of the town is in a great measure that of the district, and will be found in Chapter II. Under the Lodis it was the seat of Government for this part of the Empire, and a large fort was built on the site of the present one by Jelál Khán, grand-son of Nihang Khán. The Mughals fixed the head-quarters of the "Sirkár," or division of the Province ("Subah"), at Sirhind, and Ludhiána was only a "mahál"* or district; but it did not lose its importance; and, to judge from what are said to have been the

* "Mahál" corresponded to our tahsil better than to any other subdivision.

boundaries of the Lodis' city, it must have had a population of 5,000 or 6,000. Neither did it suffer from the Duráni invasions, although, as already noticed, Nádir Sháh is said to have ordered a general massacre of the people. On the downfall of the Mughal Empire it passed quietly into the hands of the Rais about the year 1760 (see paragraphs 24 26 and 93); and under them enjoyed the same measure of prosperity as before. Rai Kalha improved the fort, and it was one of the "thánas" under the rule of this family. Máharája Ranjít Singh took it with the rest of the country from Ráni Bhág Bhari in 1806, and gave it to his uncle, Rája Bhág Singh of Jhínd. When Sir D. Ochterlony advanced to the Satlej in 1809, land was allotted to us for a cantonment to the west of the town; but we held nothing else till 1835,* when, on the death of Rája Sangat Singh, the town and country about became our own possessions. (See for details of the above sketch, paragraphs 22—31 of this report.)

167. When the town was transferred to us, it appears to have occupied the space between the fort and ridge over the lowlands (which latter was the boundary on two sides), and the present Choura Bazár up to the Sabzmandi, and on from that the Hazuri Sarak. The present Municipal Hall and the Tomb of Pir Roshan† are situated outside the old limits on the west; but to the east of this the houses covered the whole of the unoccupied space between the Fort and the present town. I have been unable to find any record of the estimated population of that time. The old Imperial Road entered the town on the eastern side, where now the houses of the American mission settlement stand, and the Residency was also on this side; while the cantonments lay to the west, the present civil station being the remnants of them. Under Sir Claude Wade (1823-38) and his successors the town increased in size and importance, spreading out to the southwards. It became the centre of a very extensive trade in grain, sugar, cloth, &c., which found its way down the Saltej in boats from Philour. There had always been a small colony of eight or ten families of Kashmírí weavers in the city; but in the year 1833 A.D. a famine in Kashmír drove numbers of this class all over the country, and some 1,500 to 2,000 of them were settled in the town, and started in trade by the exertions of Sir C. Wade. In 1842, on our withdrawal from Cabul, the family of the Amir Shuja ul Mulk, with a numerous body of adherents and attendants came with us; and Ludhiána, then a frontier station, was fixed on as their residence. They at first took up their abode on the west side of the city; but soon after shifted to the south side, where the land on which their houses and gardens now stand was assigned to them. When after the Satlej campaign the Ludhiána district was formed, the civil offices were removed to the Cantonment side of the city; and in 1854-55 the Grand Trunk Road was metalled and realigned to its present position. In 1854 the Cantonments were abandoned, a small force being retained as a garrison of the Fort; but this change does not appear to have much affected the town,

* Although the town was not nominally ours till 1835 the Political Agents appear to have exercised paramount influence in it from the first, and many of the improvements effected in it before 1835.

† "Pir Abdul Qádir Jaláni" (see para. 64.)

which, with the improved communications, was becoming more important every year as a centre of trade. The events of the mutiny are related in para. 36. The houses of the city then came to within a short distance of the Fort; and, when the garrison mutinied, it was found to be in communication with the town people just outside of it, Sufis, Suds, Gujars, &c. Mr. Ricketts, on the departure of the mutineers, ordered the demolition of all the houses within a radius of 200 or 300 yards of the Fort, the inhabitants settling down where they could. The Gujars were removed to their lands below the city; the Sufis took up their abode in the vicinity of the Cantonment Bazar, where they now live; and the Suds and others spread themselves over the city. The opening of the Railway from Delhi to Lahore in 1870 gave a great stimulus to the trade of Ludhiána; and a number of shops and saráis were built along the Grand Trunk Road, facing the station.

168. The town is situated in an angle of the Ridge or High Bank, which to the east of it runs due north and south and then turns westward, forming the boundary on two sides. The houses are mostly built of masonry. In the old part, of which I have indicated the limits in the last paragraph, they rise storey over storey and are crowded together; while the streets and lanes are narrow and tortuous. But the new town to the south of the Choura bazár bears all the marks of being modern. The streets are wide and straight, and the houses and shops mostly of one pattern. The principal streets, the Choura Bazár and the Hazuri Sarak, were designed by Sir C. Wade himself; and one of his projects, the "Iqbal Ganj," is a standing proof that he was rather too sanguine about the speedy development of the town for which he did so much. His successors, Assistant Agents and Deputy Commissioners, have each added something, *e.g.* the "Murray Ganj" (Captain Murray), "Ghalla Mandi" or grain market (Captain Larkins), and the "Kaisar Ganj" within the last two or three years. In the old parts of the town, such as the Naugarah square, the houses are many storeys high; but in the new town they are generally of only one as yet, though some of the people along the Choura bazár have added a second. The old town was divided into "mahallas" according to tribes (Suds, Sufis, Saiads, &c.); but these have mostly been lost sight of. Attached to the city is a large area owned principally by Saiads, Gujars and Araieus, most of whom reside within the town limits or in the old military bazár, and this land is divided into eight "tarafs."

169. From the situation of the town over the lowlands and the swamps along the Budha nála, one would expect malarious fever to prevail in the months following the rains. In some years, such as 1878, there has been a tremendous loss of life from this cause, the half starved Kashmírís and others of the lower classes not having sufficient stamina to resist the attacks of the disease. Between six and seven per cent. of the whole population died from fever alone in that year (1878); and the death-rate, which had averaged 33 in the preceding five years, rose to

General description of the town.

Health and vital statistics.

111. But at other times the town cannot be said to be unhealthy, and there has been no epidemic of cholera since 1872. The sanitary arrangements are good for an Indian town, and the system of drainage appears to be now efficient. Inspection reports since 1878 speak well of the town, which was before considered to be very backward in this respect, the improvement being ascribed to the exertions of Mr. Wakefield, the present Deputy Commissioner. The supply of drinking water is from wells inside the town, the quality being apparently very bad on analysis ; but it is said that it has evil effects only on new comers. The average death-rate does not compare unfavourably with that of most Panjáb towns. The following is a statement of the population in the different years in which a census has been taken:—

1854	1868	1875	1881
39,984	39,983	40,385	44,163

The increase in the last six years is probably due to immigration ; but the floating population is always very large ; and it is impossible to say what the changes actually have been. The present population is composed of the following elements :—

Hindus	...	...	12,969
Sikhs	...	...	1,077
Mahomedans	...	...	29,045
Others	...	...	1,072

170. Reference has already been made to the ever increasing grain trade of which Ludhiána is the entrepot ; but this appears to be mostly in the hands of merchants from down country ; and the town cannot perhaps be said to have much connection with it. The returns of municipal taxation for last year give the following values of the various articles of trade which were taxed—

	Rs.
Grain	25,79,568
Sugar products	2,81,259
Cloth	6,50,086
Iron	24,304
Brass and metal dishes	20,378
Others	4,21,590
Total	37,83,185

Grain in transit is, at all events nominally, untaxed ; that is if it does not change hands within octroi limits, which embrace the railway station and encamping ground. Wool, cotton and salt are also exempted. In the last of these there is a considerable trade. The following estimate is given of the value of the imports in these three articles :—

Salt	...	...	Rs. 30,000
Pashm	...	...	" 50,000
Cotton	...	...	" 30,000

It is for its weaving industry, however, that Ludhiána is principally famous; and this is of two sorts, woollen and cotton. The former of these, chiefly the manufacture of the cloths known as "pashmína" and "Rámpur chadars" &c. from Thibetan and Rámpur wool, is at present entirely in the hands of the Kashmiri colony, although some of the country weavers are said to be picking it up. The raw material is of two classes, "pashm", or the fine wool of the Thibetan goat; and "Rámpuri un", or that of the nearer hills. The former is said to come from the "Barfáni" country, which is rather indefinite geographically. Both wools are brought finally from Rámpur, which appears to be the *entrepôt* of the trade, by the "guddis" or hill men. These men used to take the direct route *via* Rupar; but now generally reach Ludhiána from Amballa by rail. Within recent years (20 or 30), a third class of wool has begun to be imported from Kirmán, in Persia, *via* Karáchi and Lahore; and this is used as a substitute for Rámpur wool. The wool from the hills is brought here in the months of October and November, and the annual amount of the sales is estimated at Rs. 50,000. The purchases are made, in the first instance, by Hindu merchants, who take large amounts of it, and retail them to a second class of traders, or to the Kashmiris. The wool is spun into thread by women of all classes, Hindu and Mahomedan, rich and poor; and any woman can earn from rupees three to four a month by this. The Kashmiri gets a few rupees worth of wool or thread from the merchant ("Mahájan") and weaves it into a "chadar" or piece six to eight yards long, and about one and a half yards wide (Kashmiri measure, see paragraph 144). The cloth is of two descriptions; pashmína and "naqli pashmína," the former entirely of pashm, and the latter a woof (*bána*) of pashm on a warp (*tána*) of Rámpur wool, and sometimes of kirmáni. It is known as "alwán,"* and is white in colour when it comes off the loom, but may be dyed red, green, &c., according to taste. The "chadars" are purchased by well-to-do natives for wearing over the shoulders like an ordinary cloak, the piece being cut into two lengths of about three yards each, which are joined at the corners and worn double. The shawl industry ("sál báfi", or the weaving from pashm thread of "Cashmere" shawls was perhaps the most important branch of all; but it has never recovered from the complete stoppage of the trade in these articles on account of the Franco-Prussian war (1870.) It is said that there were upwards 1,000 Kashmiris engaged in it before that time, and an outturn of more than Rs. 1,00,000 worth of shawls; but France was the principal customer and has ceased to take any since 1870; and there are now not more than 100 looms (single), the rest of the weavers having turned their hands to what they could, many being reduced to beggary. There appears now to be no demand anywhere for good shawls. Native States used to take them for dresses of honour, &c.; but do not

* The name *pashmína* is applied to all cloth made of *pashm*; and it is also called (more generally) *alwán*; while the piece of about seven yards is called a *chadar*. *Rámpur chadar* is the name given by Europeans to chadars of fine quality, of pure *pashmína*, because, apparently, the article was first made at Rámpur.

now. The only shawl work at present done is in coarse wool, what we know as "jámewárs."* These are worn by natives over the shoulders and are exported towards Persia where they are said to be used for waist cloths, or are cut into strips for borders of "chogas," &c. A little fine work is still done in making wide margins for cloaks, the centre piece being plain "alwán." The coarse work turned out is not worth an hundredth part of what the fine shawl work was, a piece of "jámewár" selling for a few rupees where a shawl would have sold for Rs. 200 to 300. An ordinary chadar of pashmina costs Rs. 20 to 30, and of naqli pashmina Rs. 15 to 20. The looms are almost entirely single, and not more than two or three men ever work together, unless where apprentices learn the art from a master-weaver. The district return (paragraph 137) gives 900 looms with 960 weavers, but Ahsan Sháh, who is the representative of the body of Kashmiris, gives an estimate of 400 looms with 1,300 men and boys, weavers and apprentices. The Kashmiri population of the district is returned in the recent Census as 2,492, but a large proportion of these are in service or have other occupations. The pashmina and Rámpur chadars of Ludhiána sell all over India; and the value exported is estimated at 1½ lakhs, but the industry is said to have earned a bad reputation in recent years owing to the mixture of the inferior Kirmáni wool. The pashmina is mostly bought up from the weavers by large merchants, either Hindus or Káshmiris. On the whole the pashmina industry appears to be on the decline, and Ahsan Sháh says that the weavers are leaving the town, as the cloth is becoming a drug in the market. The Kashmiris also knit stockings, gloves, &c. There are a good many looms at which common country blankets are woven by "Mazbis" (Chúhras or Chamárs converted to Sikhism). The miscellaneous looms of all these sorts are returned as 400.

The other important industry of the town is in the hands of the country weavers (Juláhas), who make from Cotton. cotton the cloth known as "Ludhiána cloth," and locally as "gabrún"; and also "lungis" or turbans, "khes," "chadars," &c. The gabrún is of a checked or striped pattern, and is made in pieces of 15 to 20 yards length, and about a yard width. The "lungis" are of blue and other colours, and have embroidered ends, with or without gold thread. The gabrún is in great demand for making clothes for Europeans and well-to-do natives, and there is a large export of it in all directions. The "lungis" go principally in the direction of Lahore, and are much used by the frontier people as turbans. There is also some manufacture of table linen, the cloth known as "susi," and many others. The number of looms weaving cotton stuffs is returned in the district statement as 400, but a reliable estimate given to me fixes it at 900. The looms, as in the case of pashmina, are mostly single; but the estimate referred to sets down the number of weavers and apprentices at 1,700. The same loom may turn out in succession all sorts of cloth, according to the demand, gabrún, lungi,

* *Jámewár* (which means "a collection of designs") is the term applied to all pattern work of this sort. *Rumál* is an ordinary square shawl, all of this work, while a *Deshdla* is a centre of *pashmina* with a wide border (*palla*) of pattern work.

khes, &c. The cotton industries are flourishing, and there is an increasing demand for all sorts of cloths woven at Ludhiána.

Embroidery on pashmina is done by the same Kashmiris who weave the cloth, and by their children.

Embroidery.

The latter are generally put on this when first their instruction begins. The thread used is silk, and all sorts of designs are worked on the margins of the chadars, "chogas," "rumáls" (scarves), smoking-caps, &c. Embroidery work is also done on the "lungis" and on caps with gold thread by Kashmiris and by country weavers; and there are eight or ten shops where silk embroidery is worked on broad cloth for table covers, cushions, slippers, &c.*

The carpenters of Ludhiána are famous for good work; and 200 shops are returned, in which dák gharries, carriages and carts on English models, chairs, tables, &c., are made. The leather and other industries are not of much importance.

Carpentry and miscellaneous.

171. The town has a Municipal Committee of the second class, with thirteen members appointed by Government, the Deputy Commissioner being President. The average income for the last seven years from octroi is 53,400. The increase during the last few years has been enormous:— Rs.

1876-77	...	...	...	37,651
1877-78	...	...	...	47,025
1878-79	...	...	...	48,916
1879-80	...	...	...	55,076
1880-81	...	...	...	57,353
1881-82	...	...	...	56,491
1882-83	...	...	...	71,288

so that in 1882-83 the taxation was at the rate of nearly Re. 1-12 a head of the population; but the greater part of it is levied on the grain trade, nearly Rs. 40,000 being raised on this in 1882-83. The expenditure for the last year has been under the following heads:— Rs.

Octroi establishment	...	...	...	5,411
Police	...	...	...	9,115
Education	...	...	...	5,865
Sanitation	}	...	...	13,926
Establishment				
Hospital				3,051
Paving streets, making drains, &c.	}	...	...	10,716
Miscellaneous				
	...	...		5,491
Total				53,575

* The embroidery is either "karchobi" or "dori" and is worked with silk or gold thread on pashmina, merino, broad cloth, &c. In the first of these the cloth is stretched on a frame horizontally before the worker, and the work is coarser; while in "dori" embroidery the thread and the work are finer. A third sort of work is called "ári," and is done with an awl, very coarse. The industry is not confined to the Kashmiris by any means.

172. The principal educational institutions are the Government

Public institutions ; Educational &c.

High School, with an attendance of 189 boys, the Primary Government School, 211 ; the Mission School, 527 ; a Hindu aided School,

123. There are only two regular printing presses, one belonging to the American Mission Society, which publishes a weekly journal called "Nur Afshán," and the "Dharm Saháik" in connection with the Hindu school above mentioned. The principal public buildings and offices are the Municipal Hall, the Post Office, Dak Bungalow, Kotwáli

Public Offices.

or Police Station, Tahsíl and Telegraph offices, which all lie near the entrance of the Choura

Bazár, just outside the town to the west ; and the Railway station. Across the railway line, which separates it from the city, at

Civil Station.

a distance of about quarter of a mile is the district office or Kachery, while beyond this lie

the church, the cemetery, the few houses of the European district staff.

The fort.

To the north of the city the fort is situated on a point of the ridge overlooking the lowlands.

It is a square structure with a high mud wall and a deep ditch, the inside measuring about 100 yards each way ; and it owes its present form to Sir D. Ochterlony, who made use of the bricks found in the neighbouring ruins of Sunet for building it.

Streets of the city.

The principal streets of the town are the Choura

Bazaár, which runs east and west the whole length of the town, the Bazázan, Pansári, Lucha and Lakar Bazárs, Wade Ganj, Hazuri Sarak ; and the squares or market-places are the Ghalla Mandi, Kaiser Ganj, and others belonging to private persons. It is in these last squares, and market-places that most of the dealings in the grain trade inside the city go on. There is always a great deal of business in the Choura Bazar, where cloth, shoes, &c. are hawked about ; and of an afternoon it is crowded with people along the whole length. There are two or three serais along the Grand Trunk Road, facing the railway station, in which grain is stored, those of Ali Mahomed of Jhajar, Kanahia Lál, &c. Outside the city to the south lie the houses and gardens of Sháhzáda Sháhpur, and the other refugees ; and beside them is the Jail and Dispensary, while the Mission Settlement is situated further on, at the south-east corner.

Ludhiána is one of the most important of the American Mission

Mission Settlement.

stations in the Panjáb. The following brief history of it is furnished by the Reverend

E. M. Wherry. "Established in 1836 by the Reverend J. Newton and a colleague, the Reverend James Wilson ; burnt down in 1845 by the Sikhs, and again destroyed by mutineers in 1857. It publishes books and tracts mostly religious in Urdu, Hindi, Panjábí, Kashmiri, Sindhi, Thákari and English. Over five millions volumes have been printed since it began, and now the number averages about 250,000 annually. The 'Nur Afshán' newspaper is published since 1872, circulation 750 weekly." The settlement consists of three or four European,

and a number of native houses just outside the limits of the town, with a church, printing press, &c. There is another church at the west end of the Choura Bazaár beside the Kotwali, and a school building beside the Kaiser Ganj. In the printing press excellent work, typography and lithography is done; and there are also workshops attached to the Mission in which wood-work, binding (English), and other industries are carried on. Adjoining the Mission compound is the Native Christian Girls' School.

173. The principal places of interest have been mentioned in

Objects of interest.

the preceding paragraph. To the west of the railway and behind the district offices is a "Rakh," or plantation, under the Forest Department. This is traversed by roads in all directions lined with ornamental gardening; and it also contains a very good zoological collection. The Rakh is a great place of resort as a drive for the Europeans and rich natives; but all classes of the town and country people frequent it, coming to look at the beasts and birds. On the last Saturday of every month there is a fair held in it, and this is attended by crowds of people. The old cantonment has completely disappeared, except such houses as have been kept for the European residents, and a few offices close to the town, and the church and cemetery. The marks of the compounds are visible in places, but most of the land occupied by the old lines is now under cultivation. There are few antiquities in or around the city. The tomb of Pir Abdul Qádir Jaláni has already been referred to (paragraph 64). This is in the open space to the south of the fort. There is also an old tomb in the Saiad's mohalla of one of their ancestors, Saiad Ali "Fil Mast," to which is attached a grant of land, and several Hindu temples (Shiválás and Thákardwáras) of recent date. The mound of Sunet (paragraph 21) lies about three miles west of the town.

174. The second town in importance is Jagráon, which lies at a

Jagrón : situation : general description.

short distance to the south of the Ludhiána and Ferozepur Road, 2½ miles west of the former. It is the head-quarters of the tahsil of the same name, and has a population of 16,873; but the greater part of this is made up by the suburbs, called "Agwárs," which are really ordinary villages, each with a large area of land attached to it, and inhabited by the same classes as other villages. The town population proper is only 6,777, leaving 10,096 to the suburbs. In the town proper the houses are nearly all of masonry, and many of those belonging to the mercantile community are very fine buildings, several storeys high. Owing to the flatness of the surrounding country, the town can be seen from a great distance on all sides, and has a very imposing appearance. The streets are fairly straight and wide for a native town, and are well paved. The situation is most healthy, being well removed from the river; and the climate, though very hot at times, is dry and salubrious. The death rate of five years previous to 1878 was 38; but in that year the town suffered like others from fever. The population has increased by six per cent. since 1868.

175. The town is of no antiquity and the account given of its founding is this. The country about was lying

History.

waste when some 200 years ago under Rai Kalha, a Mahomedan *faqir* called Lape Sháh, took up his residence on the site of the present town, and prophesied that a city would be built there, the streets of which he marked out as they now run. Rai Kalha called cultivators from all parts, Gujars, Araiens and Jats; and assigned them the lands round the site according to the number of each Tribe; and also settled a mercantile community, whose dwellings he enclosed with a wall, the agricultural populations settling down, each body in a site in their own land outside this city. These outlying sites were shut in with the usual hedges ("wár"), hence the designation of the suburbs from "ág" (forward or outer) and "wár." The town was called after a Rájput named Jigra, who exerted himself in promoting its growth; and who was probably the Rai's representative. A small tomb of Lape Shah stands in the centre of the city, and every Thursday there is a "mela" or celebration in his honour, in which Hindus and Mahomedans alike take part. About two miles north of Jagráon on the west of the Sidhwan road, is a mound of some dimensions called "Solah," marking the site of an old village in the place of which the Agwárs and other neighbouring villages (Sherpur &c.) are said to have arisen. It was here that in 1802 (A. D.) the young Rai Aliás met with his death in the hunting field. Under the Ránis who succeeded him Ahmed Gujar, the Thánadar or local representative of the family, tried to assert his independence; but was expelled with the assistance of Patiála. It has been related elsewhere how in 1806-8 Máharájá Ranjít Singh stripped the Ránis of their possessions; and the country about Jagráon passed into the hands of the Ahluwália (Kapurthala) chief, under whom the town became the head-quarters of the 'iláqa' or territory, and the mud fort of the Rais was improved. The town came into our possession with the rest of the country in 1846 (see paragraphs 33 and 34), and the fort was demolished; but there are still remnants of the walls.

176. The town has a very considerable trade. There is a large colony of the mercantile class, mostly Khatrias

Trade and manufacture.

of the Beri, Lumba, Maria, Jaidke 'gots,' who have money-lending dealings with the villagers about; and a great deal of grain finds its way into the bazár in small amounts when the cultivator has not enough to make a journey to Ludhiána worth while. These dribblets collect in the granaries of the trading classes, and are kept till they can be disposed of at a profit. It is estimated that there are now some 400,000 maunds (*packa*) of grain in the city. The merchants from Ludhiána go and buy up on the spot from the local traders, or the latter bring the grain to Ludhiána. The opening of a new line of railway with a good station at Jagráon is likely to divert much of the grain trade from Ludhiána. There is a very large sale of brass and copper dishes, and of cloth in the bazár; and it may be said that the whole country to the distance of 30 or 40 miles

south and west is supplied from here, the Jats coming very great distances to purchase. The chief transactions are in clothes of the better sort, such as are used on marriage and other festive occasions, gold embroidery, &c. The main street ('Chowk') is generally thronged with buyers, particularly at the marriage season (May-June); and it is no uncommon thing for a well-to-do Jat to throw down Rs. 200 or 300 in hard cash in payment of a purchase of clothes. There are 15 or 20 shops of "Thatiárs," or workers in brass, where the usual dishes are made from sheets of the metal; and there is also an import of ready-made goods of this class from Delhi, Jagádhrí, &c., for sale at the ordinary shops. The brass dishes made at Jagráon are famous throughout the country, and fetch high prices. There is also a considerable trade in iron. There are a few workers in ivory, who make bangles, small boxes, &c. The bangles of ivory are necessary in every Hindu marriage, hence the industry. There are also considerable dealings in gold, of which a great deal is now-a-days purchased by the Jats for bangles and other jewelry. The 'áshráfs' of Jagráon have a great reputation for selling the metal pure.

177. Jagráon is a Municipality of the third class. The average for the last seven years of the octroi income is

Municipality and public
institutions: objects of in-
terest.

9,190, which is spent on the usual objects, Sanitation, Police, Education, &c. The tahsíl buildings are on the Ferozepur Road, with the encamping ground and sarai, about a mile from the town, but connected with it by a good metalled road. The Police station is inside the town in the building where the representative of the Ahluwalia chief used to reside. There is a Government Middle School, in which English and vernacular are taught; and two girls' schools, Hindu and Mahomedan, supported from Municipal Funds. The average attendance for last year was 279 boys and 68 girls. There is also a dispensary (see paragraph 159) maintained from the same source. The tomb of Lape Sháh, the patron saint of the city, is a small erection, standing in one of the chief streets near the centre of the city. The family of Moulvi Rajab Ali (paragraph 92) have some fine houses, and also a garden with tombs and a mosque in it adjoining them. The Beris, Lumbas, &c., have also some very fine edifices; and Devichand Beri has erected for the accommodation of travellers a very fine sarai at great expense just outside the principal gate, that towards Ludhiána. The old wall of the city is in good repair, and there are two large packa tanks outside.

178. The town of Raikot is situated in the Jagráon tahsíl, 24

Raikot.

miles, by a direct line to the south-west of Ludhiána; and connected with it by a metalled road, a branch from that to Ferozepur which it leaves just beyond Dákha, about the 13th mile. Raikot has a population of 9,219; but is not a place of very great importance. Of the population about one-half is agricultural, as there is a very large village area (nearly 8,000

acres) attached to it. This land was cultivated from of old, being divided between six villages; but 230 years ago Rai Ahmad, moving from Talwandi, the former seat of the family, made the place the headquarters of his territory, and called it Raikot. The scattered villages were collected into one town, and a commercial class assembled. The followers of the Rais would of themselves have been a large addition to the population of any place, as there must always have been a large army maintained. Raikot declined in importance on the overthrow of the Rais; but there is still a certain amount of local trade carried on by residents of the Khatri, Bhábra, &c., tribes. This is principally in grain from the villages to the south, the agriculturists taking in return clothes, brass dishes, salt, &c. The population has remained stationary during the last twelve years; and there are no signs that the place is developing, although the situation should give it the command of the trade from the Jangal, which at present goes straight through to Ludhiána. A good road opened towards Sahna would probably make some difference. The average of octroi receipts for the last seven years is 2,787; and the Municipality is of the third class. The town has, like Jagráon, a Middle School, in which English and Vernacular are taught, and a Police station, but no regular dispensary. The town is surrounded by a brick wall, ruinous in parts. The principal places of interest are the palaces of Rais, now in the possession of Imám Baklish, the adopted son of the last Ráni, who resides here. These buildings are mostly dilapidated.

179. The town of Máchiwára (tahsil Samrála) lies on the ridge over the Budha, 20 miles to the east of Máchiwára. Ludhiána on the old Rupar Road. A metallised road connects it with Samrála, the tahsil head-quarters, whence there is also a metallised road to Ludhiána; and, although the distance is 26 miles, all traffic goes round this way. The town has a population of 5,967, of which a large portion is agricultural, the village area being 4,800 acres. The town may have stood in Hindu times, as a place of the name is mentioned in the Máhabhárat; but it is doubtful if it can claim greater antiquity than that allowed by the account that it was founded 800 years ago under the Ghorian dynasty, like Ludhiána, on the south bank of the Satlej. The name means "the place of fishers," and is common all along the river. It was under the Ghoris that the Rájputs first settled in this part of the country (paragraph 21). The town has a considerable trade in sugar, the ráb of the Bét coming into it for manufacture into khand or bura (a coarse brown sugar). Some account of this trade will be found in paragraph 138, and in the Note on Sugar appended to the Report, and I have estimated the annual value of the exports of sugar and syrup at 1 to 1½ lakhs of rupees. There is a considerable commercial class composed of Khatri, Banias, and Suds, engaged in money-lending business with the villagers about, principally with the Mahomedans of the Bét. The sugar trade is mostly carried on by the Khatri, who combine it with money-lending, taking payment in "ráb," which they refine into

khand, &c. The town has a third class Municipality with an average income of Rs. 3,332, of which about 1,000 is levied on the "râb" brought in for manufacture. The streets are good, well-paved, and clean. The public institutions are a Police station, a Dispensary and a Middle School, where English and Vernacular are taught. As in Ludhiána there is a terrible amount of sickness in the autumn; and for two months most of the inhabitants suffer from fever. Under the Sikhs Máchiwára was the head-quarters of the Sodhis; and they have left a large brick fort, now partly occupied by the Police station, and a Diwán Khána or Court.

180. Khannah (tahsil Samrála) is a small town on the Sindh, Panjab and Delhi Railway, 26 miles south-east of Ludhiána. It has no particular history; but in Sikh times was the

Khannah.

seat of one of the petty chiefs amongst whom the country was divided. The last representative of the race was "Mái" Daián Kour (para. 90), on whose death in 1850 the large *jágír* of the family lapsed. The family had a masonry fort, mostly demolished now, but of which portions still remain. Since the opening of the railway in 1870, Khannah has increased in importance, and there is a rising trade in grain and cotton (exports); salt, iron, &c. (imports). The railway station is a good one, and large consignments of grain come up from the Nábhá and other territories, which lie to the south. The population increased from 3,408 in 1868 to 3,988 in 1881 (17 per cent.), and it is to be expected that there will be a further development. The average octroi income for seven years was 4,003, the increase being from 1,468 in 1876 to 4,385 in 1882. There is at present no good road to the south, and most of the trade comes on camels, donkeys, &c. The town is very healthy; and has good clean bazárs, very wide for a native town. The houses are unpretentious, being mostly of one storey, and many of sun-dried bricks only; and there is not much actual wealth in the place as yet. A large portion of the population is agricultural. There is a Municipal Committee of the third class, a thánah outside at the encamping ground, and a Vernacular Middle School. The only objects of interest are the ruins of the old fort and of an Imperial sarai, built in the time of Aurangzeb.

181. Bahlolpur is situated on the ridge over the Budha, seven miles east of Máchiwára and 27 from Ludhiána. It was founded in the reign of the

Bahlolpur.

Emperor Akbar by Bahlol Khán and Bahádar Khán, Afghans (Khán-záda), whose descendants still reside and own land in the village area attached to the town; but have sunk into obscurity. It is now a place of no importance, and has all the appearances of decay, though, when there was a brisk trade on the river which it overlooked, the town must have been flourishing. The population seems to have decreased from 3,369 in 1868 to 2,842 in 1881; but I cannot account for this great difference. The average octroi income is Rs. 1,380; but the trade, principally in sugar ("khand"), is insignificant. There are a good many resident money-lenders (Khatris and Bánias), who have dealings

with the people of the Bét. The town is very unhealthy, like Máchi-wárah, from its situation. There are a number of old tombs about the town.

182. Some of the more important of the villages are *Sahna* population 4,080, situated 54 miles south-west of Ludhiána. This is the largest of the Jangal villages, and the original seat of the Maloud family, who have a very large fort in the village. The inhabitants are almost all of the agricultural class, and the houses of sun-dried bricks. There is a bazár with a few ordinary shops. There are seventeen lambardárs or village headmen. A Police station has lately been established here. *Raipur* (population 3,747) is the chief village of the Garewál Jats, who had some local authority at the close of last century. The houses are almost all built of burnt bricks. The population is mostly agricultural; but there are a good many shops in the bazár. The village has twelve headmen. Situation, 11 miles south of Ludhiána. Of *Tihára* (population 1,143) mention has already been made (para. 21). It is situated in the North-west extremity of the district on the high bank over the river. The present inhabitants are the ordinary agricultural and miscellaneous population of five or six villages (called Tarafs), who are collected together in a common site like the people of the Agwárs of Jagráon. There is also a fair bazár with a number of shops. The old town has long since disappeared into the river, and there are no traces of it now. *Sáhnewál* (population 1,988), a station on the Sindh, Panjáb and Delhi Railway, nine miles south-east of Ludhiána, may develope into a place of some little importance. A good bazár is springing up. *Maloud*, the residence of one of the branches of the family of Sardárs, which derives its name from the place, has a small trading community and a good bazár. The population is 2,849. There are some other very large villages such as *Kaonke* (3,608), *Bassian* (2,962), but the population of these is entirely agricultural.

PART II.

THE REVISED SETTLEMENT (1878—83).

CHAPTER VII.—FISCAL HISTORY OF THE DISTRICT UP TO THE PRESENT SETTLEMENT.

183. In this second part of the report I will give an account of the operations of the Settlement just concluded, together with such information regarding the previous fiscal history of the district and of the former records as I have been able to collect, or as appears to me likely to be useful; and I will begin with the fiscal history and the new assessment, taking the records afterwards, although the latter might perhaps more properly come first in order.

In the Aien-Akbari we have under the head of "Tribute and Taxes" (Gladwin's translation, Vol. I, Part III) a complete account of the great Emperor's revenue system, and some reference to those that had preceded it. The ministers, Todarmal and Muzaffar Khān between the sixteenth and twenty-fourth years of the glorious reign elaborated a scheme for fixing the land-revenue of the Empire, and for giving security to the husbandman, which is nearly as complete as our own. One standard chain and bigah (see paragraph 145) were first introduced; then land was classified into "*poolej*" or cultivated every harvest, and "*perowty*," "*chechar*," "*banjer*" (Gladwin's spelling), fallow and arable waste. The average produce of each crop was then struck from the estimated value of the yield of three classes of *poolej* or regularly cultivated land; and of this *one-third* was taken as the Government due, all extra cesses being at the same time stopped, and salaries to be paid in cash from the Imperial Treasury being fixed for the officials, who had before that lived on the people. From the twenty-fifth year of the reign a ten-years' Settlement was introduced, the value of the Government share in each crop being taken at the average of the preceding ten years. Elaborate instructions were at the same time formulated for the guidance of the Collectors ("*Amilguzárs*") and subordinate agency. The assessment was apparently a fluctuating one, the *rates on crops* being fixed for the period; but the people were allowed to pay in kind if they chose. The rates were uniform for "*subahs*" or provinces; and no special information is to be obtained about this district in particular, as it is made up of several of the 33 "*mabáls*" of the Sirhind "*sarkár*" or division, of which the whole land-revenue is set down at 40 lakhs of rupees (16,07,90,549

dāms). Tables are given in the Aien of the rates collected on every crop during a period of nineteen years from a bigah of "poolej" or cultivated land in each *subah*. Wheat paid generally from Re. 1 to Rs. 2 a bigah; gram, &c., from 8 annas to Re. 1; "ponda" sugarcane, from Rs. 4-8 to Rs. 5; other cane, from Rs. 2 to Rs. 3; cotton, from Re 1-8 to Rs. 3; pulses and millets (moth, mung, joar, &c.) from 4 annas to Re. 1.

It was not to be expected that any more particular information as to the assessments paid by villages or tracts 300 years ago would be forthcoming; and, as the country was but partially under cultivation, and the present villages did not then exist at all or their limits have much changed since then, it would scarcely be of much use even if available. The rates fixed are, however, interesting.

184. We cannot say to what extent the system of Akbar was maintained by his successors; but the administration of the revenue must have suffered in the general disorganization of the Government under the later Emperors; and in all parts it came to be a struggle between the collectors and the payers of revenue, the former trying to take as much, and the latter to give as little as they could. The custom of leasing a large tract of outlying territory to some person of importance, who paid a fixed demand, and made his own arrangements for collection ("mustājir" or "zemin-dār") must have been recognized even in Akbar's time, for the western *muhalls* of the district were always held by the Rais on these terms. The Phulkian and Malerkotla chiefs, too, were originally lessees, and held their territories subject to the payment of what was really an annual tribute. The "mustājir" was liable to pay the sum so fixed, but was otherwise independent; and it was only when he withheld payment that the Imperial authorities interfered.

The *mustājir*, if his circle of villages was small, took a share of the produce from the cultivator, or sometimes cash rents on particular crops; but generally, as he held a large tract, he sublet it in smaller circles to others who dealt direct with the cultivators. The eastern parts of the district were at first directly managed by the Governor of Sirhind, because they were within easy reach, and an assessment was fixed year by year for each village; but, as the Imperial authority weakened, and collections became more difficult, the system of leasing "tappahs" or circles of villages spread. The principal *mustājir* or assignee in this district was the Rai of Raikot. The family began with a few villages, but gradually extended their boundaries, undertaking the revenue management (called "katkana") of outlying circles of villages as the Governor of Sirhind lost control of them; till finally they held more than half of this, and a good part of the Ferozepur district. The Maloud Sardars, like others of the Phulkian stock; had also a lease; and paid tribute to the Emperor, taking a share of the produce from the husbandmen. There were other "mustājirs" of lesser note, such as the Garewāl Chaudhris of Raipur and Gujarwāl, who had a small circle of villages, and paid revenue direct into the Imperial Treasury. The ability to realize the revenue

has always been the test of power in this country; and we find that, as the Imperial authority grew weaker, the *mustājirs* were less regular in their payments; while the villages directly assessed would only pay when forced to. As an illustration I may recount the following incidents that took place about the year 1740 A. D.* The Rai (Katha) was not paying up his revenue regularly, and informed the "Subah" or Governor of Sirhind that he could not realize from the villages. This was reported at Delhi, and Ali Mahomed Rohela was sent to bring the people to order. He marched out of Ludhiána towards Jagráon, putting to death lambardárs here and there by way of example; but he soon found that it was the Rai himself who had created the difficulty and incited the people to withhold payment. Ali Mahomed then turned on the Rai; and with the assistance of the Phulkians chased him out of the country.

185. An account of the manner in which the country was partitioned on the disruption of the Empire and the fall of Sirhind (A. D. 1763) has been given in paragraph 26. The western portions of the district were already in the possession of the Rais, and of the Maloud Sardárs, who between them held the greater part of the Ludhiána and Jagráon tahsils; while Samrála and some of the western villages of Ludhiána, which had hitherto been under the direct revenue management of the Governor of Sirhind, were seized on in groups by a number of petty Sikh chiefs from across the Satlej. The only difference that the change made to the Rais and to the Maloud sardárs was that they ceased to pay tribute. The petty chiefs from the Mánjha brought with them their system, if such it may be called, of revenue; and when in 1806—9 A. D. M. Ranjít Singh extended his territories to this side of the river, annexing all the country held by the Rais, and absorbing several of the petty chiefs, this may be said to have been introduced all over the district, Ranjít Singh divided his conquests between himself and the Kapurthala, Ládwa, Nábla and Jhínd chiefs in the manner described in paragraph 29, and illustrated in map No. IV. accompanying this report. The greater part was either retained by himself or given to the first of these. I have above talked of a *system* of revenue; but I fear it must be said of the Sikhs as rulers, whether in the Panjáb proper or in the Málwah, that their system was to exact as much from the cultivator as was possible without making him throw up his land. No one will claim for Ranjít Singh the reputation of a mild and benevolent ruler. On the contrary the careless manner in which he leased out tracts of country along with the revenue payers inhabiting them to the man who was willing to give most, or to some worthless court favourite, showed that he had a complete disregard for the welfare of his subjects. It was only when by some happy chance a really enlightened ruler of the stamp of Sáwan Mal was entrusted with the government of a portion of his conquests that any consideration was shown for the people. The chiefs, great and

* (They are referred to in paragraph 24)

small, pursued the same object as the Máharája, i. e., to get what they could out of the peasantry ; and the only restraining influence was the fear of losing the revenue payers. Land was then plentiful, and cultivators scarce, so that there was the danger of a chief driving away his villagers into the territories of a neighbour, who was not quite so bad. In effect the chiefs were landlords who exacted from their tenants the utmost that they could without driving them away. There was a strong feeling on the part of the peasantry that they had a right to cultivate the land, and it was only the most extreme tyranny that would separate them from it ; but on the other hand the demands of the chief on the produce were limited solely by his own discretion. It is of these chiefs that we read in the "Panjáb Rájas" that their rule was a mixture of "tyranny and rapacity," and that they "played at independence, which for them had no nobler significance than the right to do evil without restraint and to oppress the people who were so unfortunate as to be their subjects."

186. Máharája Ranjít Singh leased the territory reserved for him-

The same continued ; self in circles of villages, the lessees being methods of fixing the reve- changed from time to time. Thus the family of nue demand, the "Vakíls" held the pargana of Sáhnewál, pay-

ing Rs. 1,00,000 per annum for it : and Jamadár Khushál Singh held about 150 villages in different places. These lessees made their own arrangements with the villages year by year, generally taking care to leave a margin of about one-fourth as profit on what they paid into the Lahore Treasury. For some villages a cash demand was fixed, in others a share of the produce was taken or the cash value of the Government share was determined by appraisement. The Kapurthala (Abhluwália) chief had a large tract of country on this side of the river, nearly the whole of the Jagráon tahsil : and the method of fixing the assessment in his possessions may be taken as a sample, and appears to have been as follows.

"Mushakhsa" or contract. The tahsildár went from village to village every year, and first made an offer to the lambardárs of the assessment at a certain sum for that year ("mushakhsa"). This was often accepted : but if not, a valuation of the Government share of the produce for the year was made by a committee selected from the respectable lambardárs of the neighbourhood. For the rabi harvest an

appraisement ("kan") of the value of the yield from each field was made when the crop was ripe ; and for the kharíf crops fixed cash rates were generally applied. The resulting assessment for the year was seldom exacted in full, notwithstanding the free use of the various recognized methods of torture ; and large balances were generally allowed to accrue.

The lesser Sikh chiefs took a share of the produce in the

"Bataie" or division of the produce. rabi, and cash revenue according to certain rates for the kharíf crops. They were really "zemindárs" in the Bengal sense of the word ; and will still assert that the laud of the two or three villages that they

held belonged to them. The rates paid by the cultivators on the "zabti" crops were as follows :—

Crop.	Rate per acre.			
	Rs.	A.	P.	Rs. A. P.
Cane	14	0	0	to 20 0 0
Maize, Cotton	7	0	0	to 10 0 0
Charri, Moth, &c.	1	4	0	to 3 4 0
Carrots and other vegetables, poppy, &c.	5	0	0	

These rates were fixed for a *kacha* bigah or *ghumáo*, which varied a good deal throughout the district, each chief having his own standard. I have taken the *kacha* bigah at one-third of the Government standard, as this was about the average. The rate at which the chief realized his share of the produce was generally one-third of the grain and one-fourth of the straw. The share of the grain was often fixed as high as half. The Rais are said to have only taken one-fourth grain; and their rule is still spoken of with regret. One would have thought that with rates fixed so high the peasant would have little left for his maintenance; but besides

the regular revenue there were the usual dues in cash or in kind, paid to the chief or to the harpies who represented him in his dealings with the people. It was impossible that the cultivator should pay out of his produce all that he was supposed to; and his main resource was pilfering from the field or grain heap before division. The saying "*bataie lutaie*" applied with equal effect to both parties. There were about a dozen dues levied generally in cash under some absurd pretence or other; and, if we add to this that the chief quartered his men and horses on the villagers, and that the latter had to contribute their labour gratis whenever called upon to do so, we may imagine that the lot of the husbandman was not a happy one, and that he could scarcely call his life his own. It will require a training for several generations to efface the results of a system like this, and to convince the people that such a thing as honesty is possible in the relations between Government and the revenue payers.

187. In 1835 we acquired in the manner described in paragraph 31 a small portion of territory round Ludhiána and Bassian, in all 74 villages. These were managed in much the same way as the surrounding native territory for four years: then a summary cash assessment was fixed for three years; and finally in 1842 a Settlement was made for twenty years, apparently by the Assistant Political Officers, Captain

Settlement of villagers
that lapsed in 1835.

Mills, Messrs. Vansittart and Edgeworth. I can find no English report of this Settlement, which was probably more or less of a regular one on the model of those of the North-West Provinces; and I gather from paragraph 71 of Mr. Davidson's report (written in 1853) that none was submitted. A complete vernacular record with maps was made out; but this was revised when the rest of the district came under Settlement in 1850, and the assessments of 1842 were at the same time reduced where necessary, enhancements being deferred till the expiry of the full term of the original Settlement. The following statement shows the result of the assessment of these villages in 1842:—

No. of villages.	ASSESSMENT.	
	Fixed in 1842.	As Revised in 1850—53.
71	75,680	74,893

Three villages were not assessed in 1842, because held revenue free. It will be seen for this that the assessment of 1842 differs but slightly from that fixed after revision.

188. The rest of the district came into our hands after the Satlej campaign of 1845-46 (see paragraphs 34 and 35); and a summary assessment was fixed by the first Deputy Commissioner, Captain Lar-
 Summary assessments, 1847-49.
 kins, who held charge from 1846 to 1849, Sir G. Campbell, who succeeded him, completing such work as remained to be done. The only guide for the Assessing Officer was the amount collected from each village by our predecessors; and this was ascertained, so far as possible, for a period of five years from the old papers, statements of leading men, &c. A very liberal deduction was made from the results arrived at in favour of the people, the amount of this varying from three to six annas in the rupee.

The jāgīr villages were excluded from these operations, and the jāgīrdārs were allowed to continue their collections in kind, &c., as before till after the annexation of the Panjāb in 1819, when it was decided that a cash demand should be offered to all villages alike. The assessments of the Summary Settlement were accepted readily; and, considering the data on which they were founded, worked wonderfully. A few villages became disorganized, probably owing to the change of system, and reductions had to be made here and there; but the people welcomed a fixed demand, and this need not excite our surprise when we think of what they had borne under our predecessors. It is usual to contrast the elasticity of native systems of revenue with the rigidity of ours; but it was the complete want of fixity that made the Sikh system a curse to the country. The best way of forming an idea of the fairness of the summary assessment as a whole is to observe the extent to which it was necessary a few years after to revise

it in the Regular Settlement. The following figures are taken from Mr. Barnes' review of the Regular Settlement, Appendix A, which shows the final result after he had made some alterations in Mr. Davidson's new assessments :—

NAME OF TAHSIL.	ASSESSMENT.		Decrease per cent.
	Summary or by Jágirdárs' estimate.	Regular.	
Pakhowál ...	2,88,141	2,55,959	11
Jagrāon ...	1,74,334	1,68,383	3
Ludhiāna ...	2,46,786	2,42,150	2
Samrála ...	3,36,338	2,59,108	20
Total ...	10,45,599	9,25,600	11

As noticed above, the jágir villages were excluded from the summary assessment, and this statement includes the jágirdárs' estimate of their previous collections. In speaking of the results of the Regular Settlement I will show the actual extent to which the assessment of the khálsa villages was altered. The details of the revenue paid by them in the summary and in the Regular Settlements will be found in columns 79-83 of Appendix I.

189. The Regular Settlement operations commenced in 1850;

The Regular Settlement : and the assessments were announced between method of calculating the that and 1853. They were framed under the rental. regulations then in force and the instructions of the North-Western Provinces Board of Revenue, embodied in the Directions to Settlement Officers. The edition of this work then in force lays down the rule "that the Government should not demand more than two-thirds of what may be expected to be the net produce to the proprietor during the term of Settlement, leaving to the proprietor one third as his profits and to cover the cost of collection." In paragraphs 40 and 41 of his Report Mr. Davidson has given an account of how his calculations were worked out. There was a very elaborate classification of soils, each tahsil was considered by parganas (of which there were 19); and the villages of each pargana were divided into three classes according to quality. In each class of villages the rent for every crop and soil was calculated; in the case of the kharif cash rents ("zabti"), which were actually in use for the principal crops and had been taken by our predecessors, giving the necessary data. For crops on which the rent was ordinarily taken in kind a rate of yield as ascertained from experiment and inquiry was assumed, the proprietor's share calculated at the prevailing rate of rent in kind, and the value of this worked out at the average of the prices current for twenty years. The rental of each village was the total of the rents of each crop and soil.

The following is an instance of the sort of calculation made for the "Niál" land of a village;—

10 Acres under sugarcane at a rent of Rs. 13 an acre=	...	Rs. 130 rental
10 Ditto cotton ditto 7 ditto =	...	" 70 ditto
25 Ditto maize ditto 7 ditto =	...	" 175 ditto
25 Ditto wheat ditto 4 ditto =	...	" 100 ditto
70 Ditto	Total crops	Rs. 475 ditto

of which two-thirds is Rs. 316, giving on the 70 acres a *Niál* rate of Rs. 4-8-2 an acre; and the value of the other soils was estimated in the same way. For the kharif harvest the rental calculated was very little out, if at all. The rates assumed do not vary much from pargana to pargana, and there were the old Sikh *zabti* rates to go on beside existing cash rates of rent. But I think that the estimates of yield are much less reliable. As a rule the irrigated rates are much too low; and, although the cultivation may have improved, it cannot have done so to the extent that a comparison of our papers and those of the Regular Settlement would indicate. Thus the assumed rate of yield for wheat or maize in the best irrigated land is eight to eleven maunds an acre, never more than eleven: while the unirrigated rate of yield is very little less. In one statement I find the "*zabti*" rate of maize Rs. 9-11 an acre, and the rate of yield in *Niál* land ten maunds, which at the price assumed of 56 seers a rupee gives Rs. 7 as value of the whole produce. Again the rates vary capriciously from pargana to pargana. Thus in the Sáhnewál and Bhartgarh Bets (our Bet I) the rates of yield of wheat in "Dofasli" land is seven or eight maunds an acre, while in the Núrpur Bet (our Bet II), which is a very inferior tract, fourteen and sixteen maunds are taken. The result of this inequality is seen in the way in which the Núrpur rental is run up. Except in this one pargana I should say that the rates of yield in unirrigated land were correctly estimated, and those in irrigated land much too low. As to the proportion of the gross produce taken to represent the proprietor's share, part of paragraph 9 of the Chief Commissioner's review of the report ("the equitableness of the rate, &c.") appears to have been written under a mis-apprehension, and indeed is scarcely intelligible. The rate adopted as proprietor's share was one-third of the gross produce in the uplands, and two-fifths in the Bet; and of this rental two-thirds was taken as the share of Government, that is, as the revenue rate *jama*. Mention of the prices current used in the estimates of Regular Settlement will be found elsewhere, but I may here say that the prices fixed, though warranted by the information then at the disposal of the Settlement Officer, were too high for the following ten years (1850—60) which was a period of very low prices.

190. It will thus be seen that the weak point of these calculations of the rental was the produce estimate, the rates of yield, not being carefully determined; but even with this the rentals were very near the truth in most cases. From them a deduction was next made in favour of the proprietor. Under the instruc-

Regular Settlement continued: the Government share of the rental and the actual assessments.

tions quoted above this would be one-third, but in paragraph 43 Mr. Davidson tells us that he adhered to no abstract rule, but adjusted his demand to that "prevailing in the pargana," which would be the summary jama. The balance after making this reduction from the rental was the revenue rate assessment. Soil rates were worked out in a way by the following process: The rental of 100 acres of "bhur" soil was calculated as above to be Rs. 150; and a deduction of one-third was the allowance for the village, giving a revenue rate jama of 100; or 1-0-0 an acre was the "bhur" rate of the village. Having got his revenue rate assessment for each village the Settlement Officer used it as a guide in assessing, but did not adhere to it at all closely, the total of his actual assessments being considerably below it. From paragraph 44 of the report I take the following figures:—

1	2	3	4
Previous demand.	Total rental.	Revenue rates.	Actual demand.
10,54,557	16,03,823	10,35,094	9,41,347

which gives the demand as 58 per cent., of the rental.

191. In paragraphs 9 to 31 of his review Mr. Barnes gives an account of Mr. Davidson's assessments for each tahsíl (there were then four of them, see paragraph 152 of this report.)

Regular Settlement continued: general character of the assessments, as described by Mr. Barnes.

Those of Pakohwál tahsíl Mr. Barnes considered moderate; and few complaints were made to him. Pakhowál comprised the lower part of the present Ludhiána tahsíl, with the Akálgarh and Bassian parganas of Jagraón. The Malond jágir had not been before assessed. The details* given in the review for this tahsíl are:—

		Khálsa villages.	Jágir villages.	Total
Summary assessment	... ..	1,67,647	1,15,938	2,83,585
Regular Settlement assessment	...	1,79,425	74,950	2,54,375
+	-	+ 11,788	- 40,988	.....

As before explained the summary assessment of the jágir villages is a mere estimate.

* NOTE.—I give these details as I find them without any attempt to reconcile them with the figures quoted in para. 188.

The treatment of the Jagráon tahsíl was considered to be not so successful, and numerous complaints were made.

Jagrón tahsíl. The assessments of the Hatur pargana were reduced by 14 per cent.; and relief was also given in Jagráon pargana. The figures for the whole tahsíl shown in the review are :—

Summary assessment	...	...	1,74,195
Mr. Davidson's assessments	...	...	1,79,282
As reduced by Mr. Barnes	...	...	1,68,383

Even after this Mr. Barnes expressed himself very doubtful as to whether the Settlement would stand. At the present time the Hatur and Jagráon parganas are undoubtedly in a more prosperous condition than any other part of the district, except perhaps the Jangal villages; and it is hard to realise the "appearance of squalor and poverty" to which Mr. Barnes refers. The explanation appears to be that these parganas, which lie on the Ferozepur border, have always been dependant on a comparatively light rainfall, the proportion of irrigation being at present about 5 per cent. There had been two or three bad years when Mr. Barnes saw the tract in 1855, and the prices of the inferior grains (mixed gram and wheat, or gram and barley mostly) were very low. Be this as it may, the forebodings of the review have not been realized.

The Settlement of the Ludhiána tahsíl was considered to be better than that of Jagráon, and there was little or no complaint. The new demand was a reduction from 2,46,787 to 2,42,704 or of 1 per cent.

Ludhiána tahsíl. **Samrála tahsíl.** Mr. Barnes considered to have been before "grievously overassessed." The nominal reduction given by Mr. Davidson from the Summary Settlement jama was—

Summary Settlement	...	...	...	3,43,509
Regular Settlement	...	...	...	2,62,582

80,927

or 23 per cent.

If we exclude the jágirdárs' estimates (para. 188) the reduction is about 20 per cent. Few complaints were made about the Regular Settlement assessment.

It is evident from what Mr. Barnes writes that two or three years after the new assessments had been announced they were subjected to a searching scrutiny; and such defects as appeared were at once remedied. The Commissioner visited every part of the district and freely exercised his power of revision; and no man of his day had greater knowledge of the work of assessing than Mr. Barnes. The total of the reduction given outside of the Jagráon tahsíl was inconsiderable.

192. The period for which the Regular Settlement was sanctioned formed the subject of some correspondence in 1879; and I may here mention the circumstances connected with this so as to prevent future misunderstandings. The term of the Regular Settlement of 1842

The term of the Regular Settlement.

was twenty years. Mr. Davidson's assessments were introduced between 1850—53; and the tenders were taken for thirty years, either from the date on which they were written, or, when in the case of the villages settled in 1842 enhancement was proposed, from 1862, *i.e.*, after the expiry of the original period of twenty years. In para. 23 of the letter (No. 686, dated 11th August 1856, printed with the report) in which the orders of Government on the Settlement were conveyed to the Financial Commissioner the sanction is said to be "for the period of thirty years, *i.e.*, up to A. D. 1880." But the orders of Government were lost sight of, probably in the confusion resulting from the Mutiny; and the tenders of engagement remained unaltered, and show the periods as not expiring till 1892 and 1893 in the case of some villages. It was held in 1879, on a reference to Government, that the period of Settlement for the whole district should be taken as expiring in 1880; and that this should be notified to the people.

193. There was, as far as I can discover, only one refusal to engage for the Regular Settlement assessment.

Working of the Regular Settlement assessment.

The village of Bairsal in Jagráon was leased for ten or twelve years. In a few villages (part of Dhándra, Khánpur, Bahádarpur, Kanganwál) proprietary rights were transferred on account of refusal to engage in 1842 or for balances found to be due in 1847; but I cannot learn that any difficulties followed the introduction of the Regular Settlement assessment of 1850. In only one village has the assessment been reduced since the revisions of Mr. Barnes.

The following extracts from the annual Revenue Reports give the

Opinions of officers in charge of the district as to the Regular Settlement assessment.

Major McNeile.

opinions which several distinguished officers formed between the years 1860 and 1870 of the working of the Settlement. In the report for 1861 Major McNeile writes that, although balances had accrued in a few villages owing to the drought, they would be realized. "The coercive measures have been limited to a few *dastaks*, if they deserve the name of coercive measures." In the report for 1861-62 Colonel, (then

Colonel Davies.

Captain) W. G. Davies writes: "The whole of this revenue, together with nearly all the balances arising from suspensions during the drought, has been collected without recourse being had to a single properly so-called coercive measure, a striking proof of the lightness of the assessment, and the fairness of its distribution." As to coercive measures, "none have been resorted to in the course of the year, and '*dastaks*' have only been issued in sufficient numbers to provide for the pay of the establishment for collecting the revenue." As to the value of land: "A light assessment has given a high value to land in the eyes of the industrious Jat." Report of 1862-63, Mr. C. P. Elliott:—"A perusal of the reports

Mr. C. P. Elliott.

and returns of this district for the last ten years shows that during the term of the present Settlement not a single coercive measure, with the exception of the issue of a few *dastaks* as reminders, has been resorted to, a strong

testimony to the lightness of the assessment, and the fairness of its distribution." As to the price of land: "The average selling price of land has undoubtedly risen within the last few years, owing probably to the lightness of the assessment. There are perhaps few districts in the Panjáb where a better price can be obtained." These remarks are most important, because they give the opinions of three such officers, and relate to a period that was most trying for agriculturists everywhere, beginning with several years of depression in the value of agricultural produce and ending with two or three seasons of drought. In 1863-64 Mr. Elliott says that the issue of the "usual number of dastaks was the only coercive measure. It is pleasant to feel with what ease the revenue is paid in owing to the lightness of the assessment and the general prosperity of the people." In the report of the next few years the same officer (Mr. Elliott) makes remarks to the same effect. In the report for 1868-69 he writes: "Notwithstanding the late scarcity the number of dastaks issued was not larger than usual. No other coercive measure was adopted." The report of 1869-70 contains these remarks: "Considering the bad harvests in the year under report, the above results" (recoverable balances of Rs. 2,551) "were scarcely to have been expected. It proves that the assessment of this district is really exceedingly light. The revenue was paid with even less resort to dastaks than in 1868-69." (This was written by Colonel Elliott apparently). In the report for 1870-71 Mr. Cowan writes: "None of this balance (Rs. 800) is reported as irrecoverable. The abundant kharif harvest of this year has doubtless

Mr. Cowan.

contributed to the result, and the assessment of this district is notoriously a light one." I might multiply these quotations, but have selected the period 1860-70, because it contains the only two seasons of scarcity that have occurred during the currency of the Settlement. I suppose too that no officers ever acquired such an intimate knowledge of the district as Major McNeile and Mr. C. P. Elliott (the latter had charge of it continuously from 1862 to 1869); and their opinions as to the assessment are very favourable.

The remarks apply to the whole district, but no exception is made. The authorities quoted considered that the assessment was light and fairly distributed. No coercive measures have been resorted to, a sufficient number of dastaks being issued as a matter of course to provide for the pay of temporary establishment required for assistance in collection. The balances due to suspensions in the years of scarcity were insignificant (less than 1 per cent. of the demand), and were quickly realized. I might add to the above quotations from the opinions of officers between 1870 and 1878, but they appear to be unnecessary. There has been little difficulty in collection anywhere, except in some parts of the Bet; and it may be said that any apparent slackness is due, not to inability to pay, but to a hereditary unwillingness to do so. This element will be appreciated if we compare our mild methods of getting in the revenue with those employed by our predecessors. A lambardár, who has probably had experience of the latter, is not likely to care much for the issue of a warrant. In the Mahome-

dan Bet (Rājput and Gujar) villages there is generally a scarcity of cash, and the revenue has systematically to be borrowed; but this would still be the case if we were to reduce it by half.

194. In a series of Appendices (No. Va.—c) to this Report I have collected such information as I could obtain relating to the transfers of land during the last 30 years. Under native rule the only persons who could have rights in land were the husbandman and the “Sarkár,” *i.e.*, the chief, great or small, the revenue assignee or other person entitled to the *rent*. The right of the husbandman had certainly no market value, and a transfer by him for consideration was not possible. Our Regular Settlement recognized his right as something much better than that merely of cultivation; and we surrendered to him a substantial share of the “Sarkár’s” due. With a fixed assessment and a rise in the prices of agricultural produce the amount of profit to the proprietor after the payment of the Government revenue gradually increased; and land came to have a value in the eyes of all classes, not merely of agriculturists; while other and less healthy causes tended to stimulate its transfer. The power of raising money on the security of land produced extravagance, as the husbandman could command unlimited credit; and our costly legal system, with the high rates of compound interest, which at all events would never have been allowed under native rule, have aggravated the evil. The general result may be stated for the whole district that 2 per cent. of the area has been sold in the last thirty years, and that at present 8 per cent. is held in mortgage with possession, these proportions being fairly equal everywhere. Mortgages without possession are, I may say, very uncommon. One agriculturist will not advance money to another unless he gets land into his possession sufficient to give a fair return; while the money-lending classes give credit on running accounts, or, if the borrower’s credit is not good, on land transferred to them. The following statement shows the distribution of the transfers over the three tahsils:—

Tahsil,	P. C. OF TOTAL AREA.	
	Sold.	Mortgaged.
Samrála	2	6
Ludhiána	2	7
Jagráon	2	12

The registration returns (Ve.) show that the number of transfers previous to 1865 was very small; but that it has not varied very much during the three periods of five years 1866-80. The general question of what the causes are which have led to the transfers since 1865 is a very wide one; and I do not propose to consider it here. They cannot be a sign either of want of prosperity or of undue pressure of the land-revenue, for the agricultural population has never been so well off as during these

fifteen years, and the profits of cultivation have never been so great. I have no doubt that on the contrary they indicate prosperity, and may be due to extravagance resulting from a sudden influx of wealth. It is remarkable that the proportion of area in mortgage should be higher in Jagráon than in the other tahsils, although we know that the condition of the Jats here is superior to that of any other part. I should also add that mortgages are very often not due to any real pressure of debt, but merely a method of raising money temporarily required; and sometimes too they are a mere form of tenure.

195. In the next place let us see into whose hands the transferred land has come. The following is an abstract of Appendices V. a. and b.

P. C.			Co-parceners.	Other agri- culturists.	Non-Agri- culturists.	Total.
Sold to	..	...	42	23	35	100
Held in mortgage by	...	...	43	14	43	100

The inference from this is that the agriculturists can hold their own against the class whose profession is money-lending far better than in most districts of the Province. The Jats of the uplands at all events seldom allow an outsider to acquire permanently any land in a village community. The right of pre-emption is generally claimed and insisted on; and it would be also in the case of mortgages, if the law allowed of this. Every well-to-do Jat who has saved a little money will endeavour to invest it in a mortgage of land, and some of the tribe have established very large money-lending connections. Amongst the Mahomedans of all tribes, too, there are a good number of men who hold land in mortgage. It would never be difficult for a cultivator in the uplands to raise a loan on his land from a co-sharer; and this could generally be done also in most parts of the lowlands. But there is often a prejudice against borrowing money except from a regular money-lender. There are some very large bankers of the regular money-lending class in Ludhiána, Jagráon, Raikot and Máchiwárah, who carry on a large business with the villagers; and also some scattered over the district; but the mass of the Jat population can get on without any assistance, and have generally some cash in hand. Certain parts of the district are more prosperous than others; and in noticing the assessment circles in detail I will describe the condition of each. The total outstanding debt on mortgage is returned as upwards of Rs. 20,00,000, or about two years of the revenue demand. Of the money owed on book debt we have no details.

196. Appendices Va. and Vc., give the average price per acre as Rs. 34 or 26 times the revenue demand, and the mortgage money secured per acre (with possession) as Rs. 32 or 28 times the revenue demand. The price which land will fetch varies a good deal over the district; and appears to be high-

est in Jagráon and the Jangal where the labour of cultivation is small, the revenue light, and the rate of rent in kind high. The great rise in the price of the inferior grains has also probably something to do with this. The following statement taken from Appendix Vc., shows the manner in which the price has risen during the last thirty years :—

TAHSIL.	PERIOD OF FIVE YEARS.					
	1852—55.	1856—60.	1861—65.	1866—70.	1871—75.	1876—80.
Samrála ...	...	5	18	23	37	34
Ludhiána ...	11	11	16	40	71	58
Jagrón ...	...	5	14	25	39	50

Land taken up for public purposes.

The following are the details as to compensation paid for land taken up for the Sirhind Canal about the year 1869 :—

Tahsil.	CIRCLE.	NIAL.			KHALIS CHAH.			ROUSLI.			BHR.		
		Area.	Price.	Average.	Area.	Price.	Average.	Area.	Price.	Average.	Area.	Price.	Average.
Samrála.	Lower Dhaia ...	59	4,200	70	8	571	71	745	12,400	17	506	4,777	9
	Upper ditto ...	14	660	47	39	1,653	43	60	990	16	7	117	17
Ludhiána.	Upper Dhaia ...	39	1,772	45	113	4,306	38	288	10,656	37	182	2,419	13
	Tihara ..	9	590	65	32	900	28	301	9,762	32	104	1,585	15
Jag. reon.	Upper Dhaia ...	45	2,707	60	21	1,045	50	834	32,204	39	103	1,802	16

Tahsil.	CIRCLE.	JADID.			QADIM.			UNCULTURABLE.			WELLS.			Price of Build-ings, &c.
		Area.	Price.	Average.	Area.	Price.	Average.	Area.	Price.	Average.	Area.	Price.	Average.	
Samrála.	Lower Dhaia ...	28	429	15	40	692	17	18	166	9	10	3,350	335	96
	Upper ditto ...	...	...	...	13	200	15	3	31	10	3	650	217	...
Ludhiána.	Upper Dhaia ...	9	127	14	78	1,223	16	62	477	8	8	4,370	546	1,296
	Tihara ..	...	...	...	41	778	19	9	37	4	3	1,200	400	1,532
Jag. reon.	Upper Dhaia ...	...	...	...	...	...	...	56	234	4	4	1,168	292	389

CHAPTER VIII.—THE REVISED SETTLEMENT, 1879-83.

197. The revision, after a currency of thirty years, of the assessment

The new assessment: principles for guidance in a revision of assessment. of a tract in which there was but little room for expansion of resources beyond what was due to such general causes as a rise in prices and the consequences of this is not a task of anything like such difficulty as that before an officer who had little to guide him beyond the experience of a few years collection of a fixed demand, and such information as he could obtain about the value and productive power of land in a country recently annexed. Where there are no large owners realizing rent from their tenants, but only small holdings cultivated by proprietors, all calculation of the rent or net profit of cultivation must be to some extent theoretical; while the manner in which a village composed of small properties has for thirty years paid a fixed demand to Government, and the degree of prosperity which it has enjoyed during that time are perfectly certain tests of what it will be able to bear in the future. Of course, if Government has fixed a certain standard, and we find from our calculations that this has been exceeded in any case, it is our duty to give due weight to this in determining whether we should continue the assessment; but we can never have such confidence in our estimates of the value of the land of a village as to reject the experience derived from its past fiscal history.

The directions to Settlement Officers, as published under authority and embodying the alterations up to date in the orders and principles laid down by Government, together with the changes and additions from time to time suggested by the experience of the Department, and contained in recent reports and reviews, and such special instructions as the local Government may issue for his guidance, are what the Settlement Officer has to go on in the work of assessment.

I may say at the outset, with reference to a recent resolution of the Government of India, that the revision of an old Settlement in a district like Ludhiāna could not be founded on a complete revaluation of the land; and I hope that I will be able to make it plain that our inquiries as to rents, produce, &c., are intended to supply tests with a view to assuring ourselves that the Government standard is not exceeded, the real ground of enhancement being in all cases a material increase in resources.

198. In revising the assessment of a tract there are certain general

General considerations on which the revision is based. considerations which prepare us for the results, and indicate the extent to which we are likely to be able to alter the demand of the present time.

The principal of these are the increase or decrease of cultivation, and of the means of production, the alterations in the price of agricultural produce and the general improvements in resources and condition of the tract under the expiring Settlement.

Taking these in order, then, the following figures from the statement

Increase of cultivation and in the means of production. in para. 6 of Mr. Davidson's report show the area at that time still available for cultivation, and I add beneath the proportions as shown by the papers of our new survey:—

Settlement.			Total area.	Cultivated.	Culturable.	Barren waste.
Regular 1850	...	...	875,968	666,503	133,068	76,397
Per cent.	...	...	100	76	15	9
Revised 1880	...	...	882,167	729,009	86,664	66,494
Per cent.	...	...	100	83	9½	7½

The "former" return given in our Appendix I differs somewhat from the above details of 1850 ; but there have been changes in the limits of the district. The increase in cultivation has been for the whole district nearly 8 per cent.; and there is now 9½ per cent. of arable waste returned.

The increase is thus distributed over the three tahsils—

Samrála	...	...	5 per cent.
Ludhiána	...	...	7 „
Jagraón	...	...	10 „

The percentage is highest in the Pawádh and Jangal Assessment Circles of the Ludhiána tahsíl and in Jagraón. Notwithstanding the figures, I think that there is little room now for further extension, and that the margin left at the Regular Settlement has since been filled up. It is impossible that a strictly correct return of culturable area should be prepared, for what is technically known as the margin of cultivation must vary here as elsewhere with the prices of agricultural produce. With a rise in prices land that would not before have repaid the expense of cultivation may profitably be brought under the plough, and much of our culturable waste may be at present such that its cultivation would only yield a return if there were a further rise, although it is not strictly correct to call it unculturable. Nearly one-third of the culturable land of our returns is in the Bet, where it is more difficult than elsewhere to say of much of the waste that it is or is not capable of producing a crop that would repay the cost of cultivation. In the Dháia the culturable consists of areas left for grazing, which are of considerable extent in some of the outlying and western villages, but generally very small patches, just enough for the cattle to stand in.

The only other way in which the productive power of the land has been increased is by the addition of the means of irrigation. The following statement of irrigation and of masonry wells shows the extent of this in each tahsíl :—

TAHSIL.	SAMRÁLA.		LUDHIANA.		JAGRAON.		TOTAL.	
	Area irrigated.	No. of Wells.	Area irrigated.	No. of Wells.	Area irrigated.	No. of Wells.	Area irrigated.	No. of Wells.
Regular Settlement	44,653	2,547	43,979	3,233	14,009	1,080	1,02,641	6,860
Now ...	46,645	2,750	46,593	3,810	16,657	1,355	1,09,995	7,957

The increase in the area irrigated has been 7 per cent. ; and in the number of wells, 16 per cent. ; but most of the new wells are small ones sunk in the low lands under Ludhiāna (see para 98). From this it will be seen that, even if we were prepared to tax to the full improvements due to the sinking of new wells, the enhancement on this account would be a small item ; and I think that we may claim to have dealt very leniently in our assessments with irrigated land, besides taking care that the constructors of new works should enjoy the full period of protection allowed to them by the orders of Government.

199. I have reproduced as an Appendix (XII) a note, written

Prices.

when I was submitting the Assessment Reports, on the subject of the rise in the prices of agricultural produce, together with a table showing the variations during the last forty years (1840—79). Our inquiries extended over this period, or to about ten years before the present assessment was fixed. The following statement shows the increase of the prices realized by agriculturists for the principal products during the last twenty years over those of the period of twenty years preceding it :—

		Wheat.	Gram.	Barley.	"Gur."	Uncleaned Cotton.	Maize.	"Moth."	"Joat."	"Rab"
Average of 1840—59	...	100	100	100	100	100	100	100	100	100
Average of 1860—79	...	158	148	165	140	164	162	153	221	131

Briefly stated, the history of the fluctuations is as follows. The Regular Settlement Assessment was based on the prices of the few years preceding 1850, which were high ; and its introduction was followed by a general fall. Prices continued very low till 1861, when famine sent them up ; and they did not sink again to their old level. The scarcity of 1868-69, and the completion of the Sindh, Panjāb and Delhi Railway through the district in 1870, which opened the local market to the demands of the whole of India and its seaports, together with the general progress of the country, finally established prices at their present level ; and it is not probable that they will ever again recede. During the last twenty years they have on the whole been stationary ; and, although this period includes four seasons of high prices (1862 and 1868, and the two years 1878 and 1879), I do not think that this is an abnormal number, or that the actual average is unreliable. The above statement shows that the average of the prices realized during the twenty years 1860—79 by the agriculturists for the ordinary staples of produce have been 50 per cent. or upwards in excess of those of the previous twenty years.

200. The question of what inference is to be drawn from this

Conclusions to be drawn from the rise of prices.

rise in prices is an all important one. The rise is not confined to agricultural produce. On the contrary we may assume that the *value*, i.e.,

the purchasing power, has not advanced; and that a maund of wheat or grain has the same exchange value now as it had twenty or thirty years ago. I do not think that any one will assert more than this. If it be recognized that we have inherited a system of land revenue under which Government was entitled to the rent of the land, but has surrendered in favour of the proprietary rights which it has created first 20, then 33, and finally 50 per cent. of this rent, I think it might well be said that our treatment of the cultivator has been most lenient, and that we might claim for Government the full present value of the portion which we have retained. But this argument may be objected to as merely theoretical; and we could enforce it only in the case of large proprietors taking kind rents from their tenants. Competition cash rents exist to a very limited extent, and they have risen, and even now vary with prices; while the rates of rent in kind also, though generally fixed according to custom, are, so far as I can discover, higher than they used to be; besides that the increase of prices directly enhances the value of the proprietors' share. But there are few tenants in the district depending solely on the land that they rent; and we must not lay too much stress on the argument to be derived from what they pay as applied to cultivating proprietors. What we have really to consider in this connection is the extent and character of the surplus produce disposed of by the cultivating proprietors of the district, and the excess of their receipts over expenditure; for of course much of the price of the surplus produce must be spent by them in the purchase of articles which now cost much more than they used to. Where proprietary and cultivating rights are combined, the result of the rise in prices may be absorbed by an increase of the population and by a rise in the standard of comfort. In this district the increase of population has probably been covered by the extension of the area and means of production; but the standard of comfort has undoubtedly risen; and it is for consideration how far this rise has encroached on the profits of cultivation, and whether the agricultural population have not gradually accustomed themselves to live at a rate so much higher than they used to, that it would be dangerous to increase the burden of their taxation. What were not necessities to them before may have become so; and it is only luxuries that they may be able to forego in order to pay an enhanced revenue.

201. I am not inclined to trust such an estimate as might be made of the whole produce of the district, the consumption at so much a head of the population, and the resulting surplus, for there are elements of uncertainty in each of the factors making up this. From what I have written in the first part of this report about its produce, and again about its trade it will be seen that the District may be divided roughly into two parts—the western, producing only the coarser grains of the spring and autumn harvest; and the eastern, in which are grown the higher staples, sugar, cotton, and wheat, in addition to maize and the common unirrigated crops, the latter of which here cover only a small portion of the area. There is an exchange of products between the two parts.

Conclusions to be drawn
from the rise of prices
(continued.)

The cultivators of the eastern villages do not in many places (*e.g.*, the Samrāla Bet) grow enough of the coarser grains on which they almost entirely live, and have to supplement their home supply by purchases from the traders of the west; but as a rule the produce of the sugar, cotton, and wheat crops is turned into cash, which goes in the payment of the Government revenue, the celebration of marriages, the purchase of cattle or of such commodities as the people have to buy (*e.g.*, salt, metal, utensils, clothes, &c.) The rise in the prices of the inferior grains of the west, the autumn millets and pulses and wheat with grain ("bera"), has been relatively much greater than that of the higher staples of the east; and the export of the former is enormous. The result has been a great influx of wealth into this part of the country. I have elsewhere described the signs of comfort and prosperity to be found in the villages of the Jagrāon and of the western part of the Ludhiāna tahsīl; and their present condition is entirely due to the profits made during the last ten or fifteen years from the export of grain. One has but to look at the houses, clothing, jewelry and cattle of these Jats, and to inquire what they spend on marriage and other celebrations now, and what they use to, in order to be convinced of the extent to which they have profited by being able to dispose of their surplus grain for nearly double as much as it would have fetched thirty years ago. In the east there are not perhaps such patent signs of prosperity; and some tracts are not particularly well conditioned; but there has undoubtedly been everywhere a substantial increase in the wealth of the agricultural population due to the enhanced value of the produce that they dispose of. In noticing the Assessment Circles in detail I will describe the condition and resources of each; and I need not pursue this subject further here.

202. We now come to the more particular operations of assessment. A separate report was submitted on the

Assessment Circles.

revenue rates proposed for each of the three tahsīls according to the directions in the Rules under the Land Revenue Act; and inside of the tahsīls the villages were first grouped for assessment purposes. The division into Assessment Circles made at the Regular Settlement did not follow any rational principle; and the supposed necessity for adhering to the old pargana divisions made it practically useless. We have now in each tahsīl adopted the natural features of the country described in paras. 7 to 9 of this report as the basis of our arrangement. The villages of the low-lying Bet tract were first separated off. The Ludhiāna Bet was rather too extensive for convenience; and, as there is a great difference in the produce of the upper and of the lower portions of it, a sub-division was necessary; while of the former I further threw into a separate class those villages which have land subject to annual inundation ("mand" or "kacha"), as the area is of greater extent here than elsewhere along the river and differs widely from that part which is removed from the river ("packa"). In the next place the villages in the strip of sandy soil along the "Dha" or Ridge over the Bet could not come into the same class as those further inland; and were placed in a circle by themselves. In Samrāla and Jagrāon the remainder of the tahsīl was of so uniform a character

that there did not seem to be any necessity for sub-dividing it further. Such differences as exist between village and village are due to the greater or less proportion of irrigation or of poor soil, and these are points that adjust themselves in an assessment by rates on soils or classes of land. The good and bad soils are not peculiar to localities, so that the only sub-division possible would have been according to classes; and this I was unwilling to adopt, as it is open to many objections. The uplands of Ludhiána stretch much further south than those of the other tahsils, and there is considerable diversity in the natural features. The outlying "Jangal" villages, with a small rainfall and no irrigation, naturally fell into a group by themselves; and of the remainder there is such a difference between the south western corner about Pakhowál and the rich tract round Maloud, that the separation of these was necessary; and there was left the upper portion, corresponding to that of the other tahsils.

The low lands in the valley of the Satlej are everywhere known as "Bet," while the land exposed to the direct action of the river is called "Kacha" or "Mand." The uplands are generally spoken of as "Dháia," or land beyond the high bank ("Dha"). Its sub-divisions I have described in para 10. The tract immediately over the Bet has been called "Lower Dháia," and that beyond it "Upper Dháia," although the words *lower* and *upper* are not perhaps very appropriate. In Ludhiána tahsíl the terms "Jangal" and "Pawádh*" have been applied to the outlying villages and to the rich country about Maloud respectively, while the tract round Pakhowál has been termed "Tihára," or *intermediate* between them. I have carried the names Lower and Upper Dháia into the Jagraón† tahsíl for the sake of convenience. The assessment circles then are—

Samrála.	Ludhiána.	Jagraón.
Bet	{ Bet I Kacha. Bet I Packa. Bet II.	Bet.
Lower Dháia	Lower Dháia ...	Lower Dháia.
Upper Dháia	Upper Dháia ...	Upper Dháia.
	Pawádh. Tihára. Jangal.	

203. The classification of soils has already been described (para 97); and I have shown how we got rid, as far as possible, of the very elaborate sub-division of the Regular Settlement, and substituted one founded on a few broad distinctions.

* This word really means "Eastern."

† In Jagraón the land over the Bet is called "Dhaia," and that further south either "Rohe" or "Jangal."

This was the result of a good deal of correspondence, and much attention was bestowed on the subject with a view to obtaining reliable returns.

In the uplands the first difficulty was to determine what land should be classed as irrigated, and what as unirrigated. Irrigated and unirrigated. About nine-tenths of the well land there can be no question; but the area of irrigation from a well is nowhere strictly defined, as in some districts. The fields immediately round the well are watered regularly; but amongst the outlying ones irrigation is constantly being shifted about, especially where the well is at some distance from the village site. In some places to the south-west it is the custom to irrigate the fields on one side of the well this year, and those on the other side next. There is thus a considerable area over which the irrigation fluctuates; and it would be a mistake to return either the whole or any portion of this as regularly irrigated. To avoid the difficulty we recorded the area actually irrigated in the year of measurement; and the results show that we have thus obtained a result that is reliable as an average. To accept the entries absolutely as a basis of assessment for each field would give rise to errors; and, where the assessment of the village was distributed over the holdings by irrigated and unirrigated rates, we had often to make further inquiries; but such cases were not common. For the assessment of the village and of the circle the returns were quite reliable, as they gave the average area of irrigation, and this was all that we required.

From what I have written in Chapter IV it will be seen that the rich cultivation lies close round the site; and that the fields of the more distant wells receive little manure, and do not ordinarily bear two crops in the year. In the former Settlement each field was separately classed according to the crops growing in it at the time of measurement; but this method was open to obvious objections, and led to many abuses and inequalities. Profiting by the experience of the past we have attempted nothing more than to class the area of each well according to its situation and the crops grown on it. This work was done by the Deputy Superintendents and checked by the Superintendents, the Extra Assistant Settlement Officer, and myself. It was a very easy task with the aid of the village map to write off on the spot that such and such wells round the site were to be classed as "Niái" or first class, and that those outside of them were "Khális" or second class. The Patwári had then merely to fill in the entry for each field according to this. The classification was used in very few cases for the internal distribution; and, with such a large area of irrigation as there is in Samrála and parts of Ludhiána, it was necessary to have a sub-division for assessment purposes. The original meaning of the word "Niái" is "adjoining the village site," and the position of the land is what determines its value. It is not meant that every field of a "Niái" well is regularly twice cropped; but most of such fields have their turns of bearing two crops (or the equivalent) in the year. The difference between the two classes of irrigation is seen by the

following analysis of the crops grown in each 100 acres of "Niái" and of "Khális" well land in the Upper Dháia circles of Samrála and of Ludhiána.

TAHSIL.				SAMRALA.		LUDHIANA.	
Class.				Niái.	Khális.	Niái.	Khális.
Total of Crops	...	...	...	136	111	157	114
Of which Sugar	...	...	...	15	12	16	9
Cotton	...	...	...	13	14	8	16

In unirrigated Dháia lands three classes were at first adopted, viz., "Dákhra," "Rousli" and "Bhur;" but, Unirrigated lands: Dháia. as the difference in value between the first two was soon perceived to be very slight, and the agricultural mind was much exercised by the distinction, we gave it up. Between good loam and poor sand it was necessary to retain some distinction, because of the very irregular manner in which the sand hills are distributed. Thus the whole area of one village may be of the poorest soil, while that of the adjoining one is fine loam. It was impossible to frame our Assessment Circles according to these soils, as good and bad villages are intermixed all over the uplands, except in the Lower Dháia Circles which lie in the vicinity of the High Bank. Although the sand drifts are not confined to certain localities which could be marked off in circles, they are generally more or less continuous; and the good and bad soils lie in zones (called "hár" or "louns"). The poorer lands are the exception; and it will be seen that the whole area returned as "bhur" or sand is only 28 per cent. of the whole unirrigated Dháia area. In many villages there is not a single acre of poor soil; and, where sand does occur, the surface is usually uneven, and no question could arise as to most of the fields. The classification was actually done thus. The Munserims and Deputy Superintendents marked off at the commencement of measurements for each village on the spot with the aid of the old map the zones of "bhur" land; and, as in the case of the irrigation, the Patwáris had simply to fill in the fields. The only doubtful fields were those along the edge of the "hár" of sand; and, as the "bhur" area is limited, these would not amount to more than one or two in a hundred of the total area of cultivation. In such cases it was necessary to trust to the discretion of subordinates to some extent, for there are many fields that no two persons would class in the same way. Constant supervision was exercised by the Superintendents, Extra Assistant and myself; and the soil entries were carefully checked at the same time as the measurements of each village.

In the Bet the area of irrigation is very limited, and there are no such natural differences of soil as could conveniently be adopted. At the time of measurements the lands were shown as flooded or not ("sailáb" and "barání") according as they were within or without the range of the floods from the river. Afterwards, when some classification appeared necessary for assessment purposes, we marked off for each village the area of higher cultivation, i.e., that on which two crops or single ones of sugarcane or cotton are ordinarily raised. This is generally fixed and well recognized by the people themselves, and lies immediately round the village site or in plots where the quality of the soil is known to be superior. This highly cultivated land we called "dofasli" and the rest "ekfasli." "Dofasli" fields do not necessarily bear two crops every year, for the manured area is shifted about from year to year and fallows given; but they all do so in their turn. "Ekfasli" is the outlying land which seldom or never bears more than one crop. Inquiry was not made as to single fields; but the Deputy Superintendents and Superintendents marked off on the map of each village the *dofasli* plots with the aid of the crop return of two years in the case of Samrála, and of three years in the rest of the district; and the results were checked for each village by the Extra Assistant and myself.

204. Having obtained a classification of the soils in each circle we next proceeded to work out revenue rates such as would give the result indicated by the changes in the resources and the general condition of the tract, and by the produce estimates hereafter to be described; and in determining these we had as guides, first the revenue rates used in the Regular Settlement. These, as I have shown in para. 190, were merely two-thirds of the estimated rental of each class of soil; and they were to some extent useful, being the result of a good deal of inquiry made 30 years ago. The rates at which the village assessments have been distributed on the land or between the proprietors during the last 30 years would be expected to afford most reliable information as to the value attached to each soil by people themselves; but the classification of the Regular Settlement was not generally made use of for the purpose of internal rating, and the details are meagre.

205. The statistics of rent are contained in Appendices IIa. and b. of this report; and from these it will be seen that the proportion of the total area of the land paying proper cash rents is only 5 per cent. of the cultivation, that is after deducting from the areas shown in Appendix IIa. land of which the rent is for various reasons merely nominal. These competition cash rents are shown in Appendix IIb. The area being so small, we must be careful in drawing deductions from them; but they are not to be absolutely rejected. The former rulers of the country took a large share of their revenue at rates on crops; and this revenue, which was a full rent really, has survived in the cash rates now paid for land taken for the cultivation of cane, maize, cotton and other crops. Although, as will be seen from the first few columns of Appendix IIa, the greater part of the cul-

Bet lands.

Revenue Rates : Guides in framing them; those of the Regular Settlement. Village rates.

Cash rents now paid.

tivators of land returned as held by tenants have either proprietary or permanent rights in other land, still no one would pay for the use of land so much as would make it impossible for him to recoup the cost of cultivation and have something over.

There are three methods of fixing cash rents. A portion of a proprietary holding may be let for the year at so much on the local standard of area without regard to the crops to be grown; or the area may be approximately known to both parties and a lump sum (called "chakota" or "chakáwa") be agreed on without actual measurement. In the first case the area is subsequently paced out, and the rent of the whole calculated at the rate agreed on, a third party being called in to settle disputes if necessary. The third method is where a field or area is rented for the purpose of growing a certain crop, and a rent on the crop is charged at a certain rate on the local standard of measure, the area and rent being subsequently determined when the crop is standing. Between ordinary agriculturists, where the transactions are very small, one or other of these three forms of rent is adopted; but where there are large proprietors, such as the Kheri Sardars in Samrála tahsil, the old Sikh method of collecting revenue is still followed, and the tenant agrees to pay at crop rates on whatever he grows in the kharif harvest. In explanation of the headings of Appendix IIb. I should say that, where the land of the holding rented is all of one description, we have been able to enter the details under the proper class; but in most of the holdings rented at an all round rate or for a fixed sum there are several classes of land, and details have to go into the column of "Mixed." The cash rents used in our assessment reports were recorded at the time of survey (1878-79) from the statements made by the parties: but as our inquiries were known to be with a view to assessment, these were not very reliable, being generally much under the mark. Such details of rents as were to be found in the annual papers proved quite valueless, as no attempt had been made to keep up a proper record of them.

The rates of rent prevailing throughout the district do not differ very much. Irrigated land will everywhere in the Dhaia pay from Rs. 2 to 3 on the *kacha* bigah, i.e., from Rs. 9-8 to 14 an acre. The rent of unirrigated land of ordinary quality is from Rs. 1 to 1-8 a *kacha* bigah (Rs. 4-12 to 7 an acre); but the poorer soils run as low as 12 annas and 8 annas. The proportion of these poorer soils is, it must be remembered, small; and I do not think that on the average unirrigated land pays less than Re. 1 a *kacha* bigah, or nearly Rs. 5 an acre. In the Bet the first two kinds of cash rent are almost unknown.

The crops which ordinarily pay "zabt" or cash rents are cane, maize, cotton, in the irrigated uplands, and the first of these in the unirrigated lands of the Upper Bet; and in the unirrigated lands of the Dháia the autumn pulses and millets whether sown for fodder or with a view to grain also.

Different forms of cash rent: "bigah" rates and consolidated rents; cash rates on crops.

proprietary holding may be let for the year at so much on the local standard of area without regard to the crops to be grown; or the area may be approximately known to both parties and a lump sum (called "chakota" or "chakáwa")

be agreed on without actual measurement. In the first case the area is subsequently paced out, and the rent of the whole calculated at the rate agreed on, a third party being called in to settle disputes if necessary. The third method is where a field or area is rented for the purpose of growing a certain crop, and a rent on the crop is charged at a certain rate on the local standard of measure, the area and rent being subsequently determined when the crop is standing. Between ordinary agriculturists, where the transactions are very small, one or other of these three forms of rent is adopted; but where there are large proprietors, such as the Kheri Sardars in Samrála tahsil, the old Sikh method of collecting revenue is still followed, and the tenant agrees to pay at crop rates on whatever he grows in the kharif harvest. In explanation of the headings of Appendix IIb. I should say that, where the land of the holding rented is all of one description, we have been able to enter the details under the proper class; but in most of the holdings rented at an all round rate or for a fixed sum there are several classes of land, and details have to go into the column of "Mixed." The cash rents used in our assessment reports were recorded at the time of survey (1878-79) from the statements made by the parties: but as our inquiries were known to be with a view to assessment, these were not very reliable, being generally much under the mark. Such details of rents as were to be found in the annual papers proved quite valueless, as no attempt had been made to keep up a proper record of them.

Rates of rent prevailing.

very much. Irrigated land will everywhere in the Dhaia pay from Rs. 2 to 3 on the *kacha* bigah, i.e., from Rs. 9-8 to 14 an acre. The rent of unirrigated land of ordinary quality is from Rs. 1 to 1-8 a *kacha* bigah (Rs. 4-12 to 7 an acre); but the poorer soils run as low as 12 annas and 8 annas. The proportion of these poorer soils is, it must be remembered, small; and I do not think that on the average unirrigated land pays less than Re. 1 a *kacha* bigah, or nearly Rs. 5 an acre. In the Bet the first two kinds of cash rent are almost unknown.

Crop rates.

maize, cotton, in the irrigated uplands, and the first of these in the unirrigated lands of the

Upper Bet; and in the unirrigated lands of the Dháia the autumn pulses and millets whether sown for fodder or with a view to grain also.

The lowest rate paid for sugarcane land is Rs. 2-8 a *kacha* bighah, and this is only in the Bet. The average in the Dhāia is about Rs. 3 or 3-8, while in a few large villages it runs as high as Rs. 5. The general rate is about Rs. 14 or 15 an acre. This rent is for the use of the land during one and a half years usually, as not more than one crop can be got into the two years besides the cane.

The rates for maize and cotton are from Rs. 1-8 to 3 a *kacha* bighah, and average about Rs. 10 an acre in the Dhāia, and something less in the Bet.

For *charri* and the mixed fodder crops of the kharif Re. 1 a *kacha* bighah is usually paid, unless the soil is poor, when the rate is as low as eight annas or twelve annas; but on the other hand it may go as high as Rs. 1-8. The usual rent for "rousli" land is not much under Rs. 5 an acre.

In the Bet lands below Ludhiāna, where there is some very fine market gardening, land will rent as high as Rs. 20 to 30 an acre; but the above rates are those usually paid throughout the district.

206. One of the most important points in framing revenue rates is to ascertain the relative value of the different soils (para. 64 of the present edition of the Directions to Settlement Officers). In doing this we must take into consideration all the means of information referred to in the preceding paras. and also the value of the rent when paid in kind. Thus, taking ordinary unirrigated land as the unit, what will represent the value of the two classes of irrigated and of the poor unirrigated land? I found considerable difficulty in reconciling the results suggested by the different ways of looking at the matter. For example in the Upper Dhāia circle of Samrāla we have the following proportions approximately from—

- (1) The former revenue rates.
- (2) "Bāch" or distribution rates.
- (3) Crop rents now paid.
- (4) Cash rents now paid.

Soil.	(1)	(2)	(3)	(4)
Unirrigated Rousli	1	1	1	1
Simple ("Khālis") well	2½	2	2½	1½
"Niai" or (1st class) well	5	4	3½	2½

Result No. 4 will appear at first sight unaccountable; but there can be no doubt about the facts that for irrigated land the rates of rent in cash are little more than double those for ordinary unirrigated land, while the value of the kind rents of the latter, so far as we have been able to determine the usual rate of yield, suggest a much greater differ-

ence. The explanation of this is not far to seek. There is a decided preference for unirrigated land, because the labour of cultivation is so much lighter. A proprietor who has already some land can add an acre or two of unirrigated cultivation to his holding without having to increase the number of his cattle and without much additional labour to himself, while for irrigated land new cattle and much heavier labour are required (I speak of the Dháia). The recent rise in the prices of the rain crops, which has been comparatively greater than in the other sorts of produce, has also tended to raise the rent of unirrigated lands; and cultivators are willing to pay highly for such land in cash on the chance of making large profits on the sale of the grain.

207. With the data which I have described in the preceding
 Produce estimates. paras. revenue rates were worked out and applied to each soil in each circle, and the results were then tested by the produce estimates, of which I will next give an account. I may say that I have described exactly the procedure adopted. The produce estimates have been worked out in each case quite apart from the rates, and have been applied to them as tests that the result does not exceed the standard of assessment. In paras. 48-52 of the Directions to Settlement Officers are contained the general instructions as to produce estimates; and in para. 52 we read that "the Government demand for land revenue shall not exceed the estimated value of half the net produce of an estate, or in other words one-half of the share of the produce ordinarily receivable by the landlord either in money or in kind."

208. The first step in the produce estimate is to calculate the
 Gross produce : area amount of the gross produce; and to do this
 under crops. we must know (1) the average area under each crop, and (2) the average rate of yield for each soil and crop. On these two points elaborate instructions were issued by the Commissioner, Settlement and Agriculture, in 1879, by which deficiencies that had often been remarked on in the data for produce estimates were supplied. It had previously been considered sufficient to record for each field at the time of survey the crop then growing and the previous one (or the fallow as the case might be). But, apart from the uncertainty as to crops which were not actually on the ground, this method took no account of the fluctuations in the agriculture, which are in unirrigated lands very considerable. The year of survey may be a dry one, and a considerable area may remain uncropped, although really *cultivated* and ordinarily sown, or the return may be above the average. In order to obtain a correct statement of the area ordinarily cropped a field to field inspection (*girdévari*) of the crops was made, and the result recorded in each Tahsíl for every harvest up to the time that the Assessment Report was submitted. The crops were written down as they stood for the Spring and again for the Autumn harvest; while tobacco, melons, &c., which are grown at odd times in a small area, and are a third harvest between the Spring and Autumn, were also recorded separately. The average of these returns, so far as

available at the time of writing the Assessment Report, was taken as the foundation of the estimate. In the Samrála Tahsil the observations extended from Kharif 1878 to Rabi 1880, and in the other Tahsils to Rabi 1881: giving in the former case four harvests, and in the latter six, actually recorded as they stood. The average of two years harvests is better than returns of only one year; and, as we could obtain no reliable details previous to 1878 when our work started, and the submission of the Assessment Reports could not be delayed, we had to be content with what we could get. Five to ten years records would be required for a perfectly reliable average. Tahsil Samrála, where the observations covered the shortest time, has in the uplands 40 per cent. of irrigation and a high rainfall, so that the elements of uncertainty are less there than in any other Tahsil.

209. There are a few crops on which rents in cash have always been paid, or of which the produce could not be estimated with any approach to accuracy. The principal of these are sugarcane and "charri" or fodder, which paid revenue at cash rates under all former rulers; and it would be very difficult to make an estimate even approximately reliable of the value of the produce of these two crops, as well as of indigo, tobacco, vegetables, *san*, &c. In our produce estimates the crops of each harvest have been divided into (1) those on which kind rents are ordinarily paid, and (2) those on which cash rents are ordinarily paid. From the prevailing rents paid for cane and *charri* average rates were adopted; while for the minor crops we had the information supplied by the papers of the Regular Settlement and by our present inquiries. These cash rates gave us at once the full rent for the crops; and we had merely to take one half of this as the estimate.

210. But by far the greater part of the crop area comes under the head of (1), and an actual produce estimate had to be made. In the matter of obtaining reliable data for the average rate of yield the second change introduced by the instructions referred to in the last paragraph was that, instead of a Settlement official cutting down a few square yards of standing crop here and there, and weighing the produce there and then, we selected for experiment in each harvest good sized holdings such as would fairly represent the average cultivation. These were put in charge, sometimes of paid watchers and sometimes of respectable agriculturists; the whole of the crop was cut and stacked according to soils and crops; and the produce weighed in the presence of the owner and of the people by the person in charge of the experiment. Upwards of 50 or 60 holdings, averaging five or six acres in area, were treated in this way in each harvest, every Munserim having one in his own circle, and the Deputy Superintendents and Superintendent, each two or three. The proposed localities were in all cases reported to me for sanction before the experiment was made, and a different village chosen every harvest, so that the results may be taken as covering the greater part of the District. The Extra Assistant and I did

not work by holdings; but, when the crops were nearly ripe in each harvest, we selected areas several acres

covered was from the Rabi of 1879 up to that of 1882, inequalities due to seasons above and below the average must have disappeared in the averages as far as it was to be expected that they should. The following is a statement of the number of experiments and the area which they covered at the time that the Assessment Report of each Tahsíl was submitted.

Tahsíl.	No. of harvests.	No. of experiments.	Area.	Average area for each experiment.
mrála ...	3	161	491	3
idhiána ...	5	559	1,838	3
gráon ...	5	249	863	3
Total ...	...	969	3,192	3

In Appendix III are embodied the results for the principal crops of the whole of the experiments made, including those subsequent to the submission of the Assessment Reports. In the case of Samrála the materials for the average rates of yield (assumed) were perhaps somewhat deficient, and a few of the results would have been modified with better information; but a comparison of the two sets of figures in Appendix III will show that we have not at all events over-estimated the produce.

Other means of information as to the yield and value of crops.

211. Besides these experiments we had several sources of information to guide us in fixing the average rates of produce :—

(1.) The rates adopted at the Regular Settlement, though not generally very correct, were still of some assistance.

(2.) The patwáris' annual papers I found quite unreliable. They are supposed to contain the amount of produce taken by the proprietor and by the tenant where kind rents are paid; but it is impossible that this should ever be correctly recorded, for the patwári must accept as true whatever the parties tell him.

(3.) Some little information I obtained from the private papers of owners, but there are very few men whose properties are large enough for our purposes.

(4.) The science of estimating the outturn of a field of crop is one which was possessed by many men under the Sikhs, as it had constantly to be exercised in the "Kan" or "Kankut" valuations; and most agriculturists can, if they choose, tell with great accuracy the yield of a crop. The more respectable men are generally willing to give reliable estimates.

(5.) Cash rents are sometimes paid for a few of the crops (*e.g.*, maize, cotton) of which the rent is ordinarily taken in kind; and, where we have both forms of rent, we can use the cash rates as a check on the result of our experiments.

The want of a continuous record of agricultural produce and of rents is very much felt when one begins the assessment of a District; and it is not till the end of Settlement operations that anything approaching to certainty can be attained about the averages assumed. Had such a record been maintained for the five or ten years previous to Settlement we should have been in a very much better position.

212. It is not necessary that I should here do more than give the results of the experiments and those accepted by us for a few of the principal crops

Rates of yield adopted and those given by the experiments for the principal crops.

in the soils on which they are generally grown, and for fuller details I would refer to App. III.

Wheat, for instance, is raised in the irrigated lands of the Dháia and the unirrigated lands of the Bét: while "berra" or wheat with gram (also barley with gram) is the unirrigated crop of the Dháia for the Rabí. Maize and cotton in the Kharíf take the place of wheat in the irrigated Dháia and unirrigated Bét lands; and *moth*, *múng*, &c., alone or mixed with *churri*, *joán*, &c., that of "berra." The following tables of the averages for maize, cottons, wheat, "berra" and *moth* &c. (the pulses) cover, it will be seen from Appendix IV, the greater part of the area returned as under crops "paying rents in kind."

Abstract statement showing for maize, uncleaned cotton and wheat crops the average rates of yield per acre in seers for each class of land as given by experiment and assumed in the produce estimates, and the area of experiment in acres and decimals of an acre.

NAME OF CROP.	NIAI CHALI.						SRAHI BET.				KHAIS CHALI.								DOFALI BET.				EKFALI BET.						
	LOWER DHALA.			UPPER DHALA.			Samsila.		Ludhiana Bet Pacha I.		Dagon.		Ludhiana.		Samsila.		Ludhiana.		Dagon.		Samsila.		Ludhiana Bet I.		Ludhiana Bet II.		Dagon.		
	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana.	Dagon.	Samsila.	Ludhiana Bet I.	Ludhiana Bet II.	Dagon.	Samsila.	Ludhiana Bet I.	Ludhiana Bet II.	
Soti, Circle and Tahsil.	By experiments	839	...	1,129	593	1,052	1,172	905	1,224	266	466	647	1185	776	...	...	673	666	320	...	1956	269	351	464	340	...	...	946	860
	Assumed	...	480	600	720	840	880	890	880	430	580	520	870	430	600	600	600	600	650	1000	880	300	340	250	...	250	240	240	
	Area of experiments	...	45	...	27	30.8	34.7	237	18	23.6	1.2	2.2	11.2	1	...	...	13.5	3.9	3.5	...	1.1	1.1	1.9	8.6	4.5	...	...	47	3
Maize	By experiments	17	...	...	331	382	113	410	259	205	126	...	...	193	...	...	259	257	133	...	59	101	161	...	21	...	142	...	...
	Assumed	...	250	200	250	280	220	300	240	200	200	...	...	200	200	180	220	240	200	280	200	160	160	140	140	...	140	120	...
	Area of experiments	...	2.5	...	...	67	5.5	1.1	5.1	4.4	...	...	...	5	...	...	14.2	7.1	7	...	2.3	5	1.1	...	1.8	...	1	...	...
Uncleaned Cotton	By experiments	363	455	626	755	663	774	641	521	513	931	353	151	237	423	638	617	600	649	337	500	275	268	311	237	111	274	269	205
	Assumed	...	400	400	450	600	450	440	440	430	400	400	400	400	400	450	600	550	520	500	520	240	250	220	240	...	240	220	220
	Area of experiments	...	6.3	9.5	6	41.5	40.7	31.7	15.8	34.5	3	2.1	5.9	1.2	3.4	5.8	14	32.1	18.6	5.8	8.4	17.6	36.6	18	9.1	14	61.3	23.4	19.2
Wheat.	By experiments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Assumed	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Area of experiments	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Abstract statement similar to the foregoing for "berra" (i.e. wheat mixed with gram) "moth," "mung," &c. (pulses).

Name of Crop.	Soil, Circle and Tahsil.	DÁKHAR AND ROUSLI.									BHUR.										
		LOWER DHATA.			UPPER DHATA.			Pawādh Luddhiana.	Tibara Luddhiana.	Jangal Luddhiana.	LOWER DHATA.			UPPER DHATA.			Pawādh Luddhiana.	Tibara Luddhiana.	Jangal Luddhiana.		
		Samráia.	Luddhiana.	Jagrāon.	Samráia.	Luddhiana.	Jagrāon.				Samráia.	Luddhiana.	Jagrāon.								
"Moth," "Mung," &c. (pulses)	By experiment	220	289	205	340	363	369	273	312	(Barley and Gram)	306	133	269	181	130	179	188	162	231	333	
	Assumed	...	...	240	220	300	320	320	260	280	260	...	140	140	...	180	180	160	160	180
	Area of experiments	...	2.2	67	3.9	5	27.5	180.4	215.2	64.6	100.2	92.3	6.2	34.3	63.5	8.8	62.3	38.3	11.1	43.1	29.1
	By experiment	102	90	155	123	131	116	117	142	134	91	120	68	100	120	145	99	139	272	272	
"Moth," "Mung," &c. (pulses)	Assumed	...	120	120	120	160	150	150	140	140	140	100	100	100	120	110	120	110	110	110	
	Area of experiments	...	15.7	3.3	4.6	5.0	34	9.7	2.6	8.5	5.6	28.1	5.6	5.5	41.1	47.1	10.6	15.2	9.5	35.1	

For the less common crops the data from actual experiment were deficient; but it was easy to assume reliable average of yield from the analogy of the more common ones and from inquiry.

213. In paras. 199—201 and in Appendix XII I have discussed

Value of the total produce: prices adopted.

the subject of prices; and it is not necessary that I should add much here. In working out the value of the total produce obtained in the manner described in the last two paras. we have applied the averages of the prices obtained for agricultural produce by the cultivators during the last 20 years.

The last 15 or 20 years show no very violent fluctuations; but there has been a steady rise on the whole; and it would be perfectly safe to assume that during the next 20 or 30 years prices will range higher than those assumed by us. The following statement compiled in the office of the Commissioner Settlement and Agriculture shows that the rates adopted by us agree with those accepted in the recent Settlements of other Districts of the Province.

Average prices of principal articles of agricultural produce assumed in recent Settlements. (The prices assumed for the Sadr Tahsils are quoted in each case).

District.	PERIOD FROM WHICH THE AVERAGE WAS RECKONED.			SHEES PER RUPEE.										
				Rabi Produce.					Kharif Produce.					
	From A. D.	To A. D.	No. of years.	Wheat.	Barley.	Gram.	Wheat and Gram.	M u s t a r d seed.	Uncleaned Cotton.	Maize.	Jowar.	Rajra.	Mooh.	Til.
Delhi ...	1854-55	1874	20	27	30	34	30	...	13	37	30	35	34	15
Gurgaon ...	1853	1873	20	30	40	35	33	6	12	40	30	33	40	16
Karnal ...	1855	1874	20	30	41	39	37	...	12	37	30	29	31	...
Rohtak ...	1814	1873	3	27	40	37	...	...	10	34	35	33	30	15
Ludhiāna ...	1861	1879	20	30	40	35	33	20	10	32	30	...	35	15
Jhang ...	1855	1874	20	27	39	33	...	...	11	...	30	31	32	15
Multan ...	1853	1872	20	31 to 33	40 to 41	34 to 38	...	...	13 to 15	...	40 to 41	40	...	16 to 20
Muzaffargarh ...	1854-55	1876-77	23	28	3	25	...	17	11	...	28	30	21	14
Dera Ismail Khān ...	1813	1872	30	35	45	40	...	...	13	29	45	40	40	14
Bannu ...	1855	1871	29	32 to 35	65	40	...	...	13	50	...	40	...	...
Jhelum ...	1833	1870	41	41	...	30	...	35	15	...	...	50	50	...

214. It is usual to exclude from the produce estimate such crops as are grown entirely for fodder, and in paragraph 60 of the Directions to Settlement Officers it is laid down that "crops grown as fodder for the cattle employed in agriculture should, as far as possible, be excluded; as this estimate is intended as a guide in assessment." For the reasons given in paragraphs 87 of the Samrāla and 44 of the Ludhiāna Assessment Reports I departed from the procedure usually followed. I quote the reasons given in the Ludhiāna Assessment Report:—

"It is usual to exclude from the produce estimates area under fodder crops. In Samrāla I did not do this for the reason that the proprietor always charged the tenant rent for land under fodder. In this Tahsil, too, the cattle are fed on the stalks of maize, *jowar*, *churri*, and the straw of *mooh* and of all the Rabi crops. The area devoted to fodder crops proper is minute in the Rabi, and there is usually no necessity for the cultivator to cut any of his wheat or barley for the purpose. There is grass to be had at most seasons; and he will rather mix moistened grain with the straw than green corn. The fodder crops proper are in the Rabi:—

"Methe" and "Senji" ...	...	2,318 acres
Carrots ...	...	1,100 "
Total ...	...	3,418 acres

They make up a very small proportion of the area of Rabi crops (about $\frac{1}{2}$ per cent.); and are grown in small plots at the wells, following maize or cotton. A tenant gets no allowance for the area, but has to pay rent for it as for other land. Carrots are eaten by

the people themselves, and *methe*, &c., are often sold in the Ludhiána bazár as fodder for the cattle of the city. At the Regular Settlement *zabti* rates were fixed at Rs. 4 to Rs. 6 an acre for carrots, and Rs. 2 to Rs. 3 for *methe*, &c. Carrots have been included in vegetables (Column 18, Appendix IV); and I think we may leave them there as the area is only 1,100. I have not taken the *methe* &c. into account in this Tahsíl. I have had a statement made out of the area of the Rabí grain crop (wheat and barley), which was cut and used as green fodder. This was written down when the crop was nearly ripe and no more could be cut; and the result was an area of 1,588 acres, or less than 1 per cent. A good part of this area is in the Lower Dháia and Bét; and most of this green corn must have been sold in the City, where it commands a high price. It is not unusual to sell it in the villages also; and, where a tenant is allowed to cut it, he has to pay the proprietor rent. I have, therefore, made no deduction on this account. It must be remembered, too, that the proprietor, at all events in the uplands, takes a share of the straw, which we have left out of account. The Sikh rulers used to take a share of the straw, and it was included in the Regular Settlement produce estimates.

As in Samrála I have taken a *zabti* or cash rate on the *charri* or autumn fodder crops the grounds on which I propose to include it in the produce estimate :—

(1.) A tenant who sows *charri* has to pay a rent on it, generally in cash; but sometimes (especially in the Bét) a division is made of the standing crop, the field being measured out and the proprietor's share (one half or two-fifths) being marked off on the ground.

(2.) Native rulers always took a *zabti* rate on the crop, from 6 annas to Re. 1 a *kacha bigah* (Rs. 1-8 to Rs. 4 an acre). In the produce estimates of the Regular Settlement it was included; and crop rents of Re. 1-4 to Rs. 2 an acre taken. These facts show that a share of the *charri* crop, or a cash rent for it, is usually received by the proprietor from the tenant.

(3.) In the Bét there is seldom any yield of grain from *charri*, but in the Dháia there always is; and, if we keep out the fodder, we should include this. The amount of grain depends on the season and the people themselves don't know quite what they get, for the heads are picked now and again by the women.

(4.) Finally, if any deduction is to be made on account of the *charri* crop, it should be made from the whole half asset estimate of the Circle, and not from that of the unirrigated soil. Each holding is made up of irrigated and unirrigated land; and the *charri* grown in the latter feeds the bullocks used for the whole."

Merely to exclude the *charri*, *charri* and *moth*, &c., crops would, for the fourth reason given above, throw the whole of the estimates out, because the deduction would be made from that of the unirrigated soils, while the fodder is actually consumed by the well cattle. In paragraph

13 of his review of the Samrála Assessment Report the Financial Commissioner concurred in these views, and thought that "as a general rule Settlement Officers should follow in this matter the practice which prevails between proprietors and tenants-at-will."

If we were to go strictly on the instructions quoted from the "Directions" at the end of paragraph 207 of this report we should include in the estimate the value of the share of straw received by the proprietor from the tenant. The custom of the Sikh rulers was to take as their share of the produce, when the revenue was paid in kind, a portion of the straw slightly less than that fixed for the grain; and proprietors at the present time continue the practice everywhere except in the Bét. Thus a tenant paying at the rate of two-fifths of the grain also gives one-third of the straw; or, if the share of the grain is one-third, that of the straw is a quarter. The real reason for both the above practices, taking a cash rent on fodder crops and a share of the straw where rents in kind are paid, is that, owing to the great fertility of the soil and the heavy yield of fodder, the cultivator can afford to allow the proprietor a portion of it; and this appears to fully justify our departure from a procedure followed in districts where such crops have always been to some extent exempted from revenue and rent.

215. In paragraph 128 I have given an account of the village artizans and menials (*kamíns*), and the allowances made to them. Under former rulers, when the revenue was realized in kind, a small portion of the whole produce was first set apart for the *kamíns* and for some servants of the chief, and the remainder was divided between the cultivator and the "Sarkár" in the proportion fixed. With our cash demand this custom disappeared, and the *kamíns* receive their allowances from the cultivating proprietors in a lump at each harvest. There is none of the elaborate division of the produce such as is customary in other Districts; and, even when a tenant pays his rent in kind, no deduction is made from the common heap; but each party gives his *kamíns* from his own house a fixed amount of produce and not a share of the whole. I have remarked that the tendency is for the cultivators to alter their agreements with the *kamíns*, and to cut the allowances down. In fact these allowances are generally ceasing to be determined by custom. The calculations made by me gave the result that of the whole produce from one-twentieth to one-sixteenth was given to the *kamíns*, and I have fixed the deduction that should be made on this account from the total produce at $7\frac{1}{2}$ per cent. It may be open to doubt whether any deduction at all was necessary, for a tenant paying in kind has to give to his *kamíns* a portion of the share left him by the proprietor; but I did not consider it advisable to depart here again from the usual procedure. I may mention that in places proprietors have taken advantage of the old custom and realize a proportion (1 or 2 seers in the maund) of the total produce

Deduction for the dues of *kamíns* or village menials.

under the name of "kharch" over and above the share of the produce agreed on; but this, though nominally for servants and *kamíns*, is really only an addition to the proprietor's share.

216. The proportion of the produce now taken by the proprietor from the tenant must be our guide in determining what share represents the net profit to a proprietor cultivating his own holding. The area returned as paying rents in kind is 10 per cent. of the whole cultivation. The rates prevailing are as follows: In the *Bét* one-half of the grain is taken without a share of the straw; and sometimes two-fifths where the land is irrigated; but even in the case of well lands the proprietor ordinarily realizes at the higher rate. A share of the straw is taken in a few villages. In the *Dhúia* the rate for irrigated lands is one-third of the grain with one-fourth of the straw; and for unirrigated lands one-half of the grain is taken as often as two-fifths, very seldom one-third; while the proprietor's share of the straw varies from one-third to a quarter. I have noted in the last paragraph that the proprietor in addition to his proper share of the produce takes also a portion under the name of *kharch*; and it was not possible to include this in our rent returns. In places, too, the proprietor takes from the tenant a portion of the revenue demand as well as a share of the produce. Our calculations of the average share received by the proprietor are thus somewhat under the mark; but it is the actual average given by the rent returns for lands held by tenants-at-will paying in kind.

217. In Appendix IV is given only an abstract for each Tahsíl of the produce or half-asset estimate, as it would have taken up too much space to show the details for each circle and soil. In the preceeding paras. I have endeavoured to show how in regard to crops paying rents in kind we have ascertained for each circle and soil (1) the area under each crop; (2) the average rate of yield, which together give the gross produce; and (3) the value of this at the average prices of the last 20 years. Then (4) from this value of the total produce a deduction was made on account of the dues of the village menials (*kamíns*) paid out of the gross produce, and (5) of the remaining value the proprietor's share was calculated at the prevailing rates of rent in kind; and half of this was taken at as the half-asset or produce estimate for the soil. The following statement is given as showing the ratio that the estimated value of the half proprietor's share bears to that of the total produce, and the manner in which the half-asset estimate is derived from that of the whole value of the produce:—

Tahsil.	ASSESSMENT CIRCLE.	Total produce.	Deduction for kamias.	Irrigated or Unirrigated.	Owners' share at average rate of rent in khud.	No. of whole produce after deduction in col. (4.)	Percentage of half-assessment estimate to gross value of produce.
Samrala.	Bét	100	7.5	Irrigated	50	46.25	23.13
	Lower Dhāia	100	7.5	Unirrigated	50	46.25	23.13
	Upper Dhāia	100	7.5	Irrigated ... ..	...	...	...
				Unirrigated ... ..	...	...	...
				Irrigated	36	44.3	17.5
Indbhāna.	Bét I kacha	100	7.5	Unirrigated	39	36	18
				Irrigated	50	46.25	23.12
	Bét I packa	100	7.5	Unirrigated	50	46.25	23.12
				Irrigated	48	44.4	22.2
	Bét II	100	7.5	Unirrigated	50	46.25	23.12
				Irrigated	42	38.84	19.42
	Lower Dhāia	100	7.5	Unirrigated	46	42.54	21.27
				Irrigated ... ..	...	...	...
	Upper Dhāia	100	7.5	Unirrigated ... ..	...	...	...
				Irrigated	34	31.3	17.15
	Pawādh	100	7.5	Unirrigated	38	35.14	17.57
				Irrigated	33	30.52	15.26
	Tihāra	100	7.5	Unirrigated	36	34.3	17.15
				Irrigated	30	34.3	17.15
	Jangal	100	7.5	Unirrigated	40	37	18.5
				Irrigated	41	37.92	18.96
Jagtron.	Bét	100	7.5	Unirrigated	41	37.92	18.96
				Irrigated ... ..	...	...	...
	Lower Dhāia	100	7.5	Unirrigated ... ..	...	...	...
				Irrigated	30	28.6	14.3
	Upper Dhāia	100	7.5	Unirrigated	42	38.8	19.4

218. It remains for me to give an account of the rates and actual assessments of each of the Tahsils and Circles; and in the following paragraphs I have embodied so much of the details given in the Assessment Reports as appear likely to be useful for reference. :—

TAHSIL SAMRALA, BÉT CIRCLE.

219. This Circle contains 68 villages with a total area of 26,773 acres, of which 16,175 acres or 60 per cent. are cultivated, 4,511 or 17 per cent. culturable or recently thrown out of cultivation, and 6,087 or 23 per cent. unculturable. It consists in the first place of the land (called "Mand") immediately adjoining the Satlej and liable to annual inundation. The deposit left by the River is very fertilizing, and a rich clay soil is formed; but in places this is shallow and the under stratum of sand is soon reached, and land that looks very good may thus have a very poor yield. Beyond the *mand* the land is higher, and the soil of more ancient formation and deeper (generally three or four feet.) Water is near the surface, and there is seldom lack of moisture; so that artificial irrigation is not wanted. The soil of this, the *packa* Bét, is generally a rich dark clay, very fertile, but requiring a great deal of tillage. In places there are sand drifts left by the

River, but these are rare. Under the High bank runs the Budha nála in the old bed of the Satlej. The land to the south of the Budha, between it and the High bank, is generally very good, as it rises away from the former, and the soil has a mixture of sand from the Dháia. On the other side of the stream there is a strip of land rendered permanently barren by the proximity of the water, or actually swamped.

220. The proportions of area under the principal crops are :—

Crops and husbandry.				
Rabí 53 per cent.	{ Wheat	...	...	43
	{ Barley and <i>masar</i>	...	...	7
	{ Others	...	...	3
Kharif 47 per cent.	{ Sugar	...	...	11½
	{ Cotton	...	...	2½
	{ Maize	...	...	18
	{ Rice	...	...	3½
	{ Fodder (<i>charri</i>)	...	...	8
	{ Others	...	...	3½

In the villages of the *packa* the land round the site generally produces two crops (wheat and maize) in the year, being heavily manured and fully tilled. Sugarcane is grown in selected fields, not necessarily close to the site. In the villages near the River the twice cropped land may be at some distance from the homestead, the people preferring to build on the higher ground, but cultivating their best land, which lies low, most carefully. Outside the *dofastli* area a single crop is grown, generally of wheat in the Rabí, or fodder in the Kharif. *Masar* (lentils), or barley and *masar*, is sown in the newly recovered land of the *mand*. Owing to the floods an equal area cannot be sown in both harvests, and thus the greater portion of the cultivation is on the *ekfastli harsála* system, bearing a Rabí harvest year after year. Cotton is grown principally in the drier, and rice ("dhán") in the *mand* or flooded lands. The cotton crop is generally good,

The most important crop in every way is the sugarcane; and it requires special mention, as the prosperity of the tract may be said chiefly to depend on it. There is nothing remarkable about the method of cultivation, which has been described in detail elsewhere; and an account has also been given of the manufacture of the *ráb* into sugar, and the trade in *khand*, *burah*, &c. Enormous profits are made out of this trade; but the people who grow the cane have very little share in them, and are for the most part hopelessly involved in debt. The cause of this is to be found in the relation subsisting between the money-lender and cultivator. The latter can command almost unlimited credit, and it is generally necessary that he should have an advance on his crop, which has no return for more than a year. This debt he has to repay with interest; and in discharge of it he gives his *ráb*, which is taken over at a price agreed on according to its quality between the parties, really at the price that the creditor

chooses to fix. If the crop is successful a good part of the debt will be wiped out ; but a fresh advance is required ; while, if the crop fails, the debt with compound interest gets too large ever to be cleared off, and the cultivator is in the hands of the money-lender.

221. Of the whole area 60 per cent. is in the hands of Mahomedan Jats ; 23 per cent. of Mahomedan Rājputs ; and 5 per cent. of Gujars : and it is much the worst feature of this Circle that 88 per cent. of the land is held by the most improvident classes. I do not think that there is very much difference in the character of the three tribes as far as the absence of those qualities that go to make up a good "mālguzār" or revenue payer are concerned ; but the Jats are somewhat better than the rest, and their villages are in better condition than any others, except the two or three belonging to Hindu Rājputs and Sainis. Of the cultivated area 3,490 or 21 per cent. is held by tenants-at-will ; and 1,336 or 8 per cent. by tenants with occupancy right ; or in all 30 per cent. of the cultivation is by tenants. These belong for the most part to the same classes as the proprietors.

222. Our returns show that since Settlement 512 acres, or two per cent. of the whole land, has been sold and that 2,040, or nearly eight per cent., is now in mortgage with possession of the mortgagee. The percentages on cultivation are three sold, and twelve mortgaged ; and it is probable that only cultivated or culturable land has been transferred. The average price of the land sold is Rs. 34 an acre ; and the amount secured on mortgage, Rs. 33. The land transferred has gone almost entirely into the hands of strangers. Thus on the whole nearly ten per cent. of the total or fifteen per cent. of the cultivated area, has been transferred since the Regular Settlement ; and most of it to the money-lending classes. These statistics are far from showing the whole indebtedness of the people. There are a few villages able to hold their own ; but they are a small proportion of the whole. Some have gone entirely into the hands of the money-lenders, the land having been sold or being held in mortgage for such an amount that there is no chance of it ever being redeemed. There are colonies of bankers (Suds, Khatris, Banias) in Māchiwārah and Bahlolpur who live entirely by lending to the Bēt cultivators ; and many of these classes have established themselves in the villages (Panjgraien, Sherpur, &c.) The amount of money owed on book debts is enormous. I have totalled it up in some villages, and find that it comes to Rs. 10 or 15 an acre. The villages are all small, averaging about 400 acres total area ; and many are on the money-lenders' books for Rs. 5,000 or upwards.

There can be no doubt that the tract is in a bad way ; and that a large proportion of the land is passing out of the hands of the old proprietors into those of the money-lending class : and there are many causes at work to produce this result. In the first place, the bulk of the people are improvident by nature, and

it is probable that if the land were in the hands of Hindu Jats they would be able to hold their own. The tract is one of the richest in the Province; and, if the people had the necessary qualities for tiding over an occasional bad season, or could subsist without borrowing while the cane crop was growing, they would now be very well off. The ordinary cultivator is, however, so incapable of making his own terms with the money-lender that I believe he has to pay, or is debited, with Rs. 200 for every Rs. 100 that he borrows. I do not think that there is over population, for the density (600 a square mile of cultivation) is less than in the richer tracts of Hoshiárpur and Jálándhar. The produce is more than sufficient for the support of the people if it were not diverted. It would be much out of place here to discuss any remedies for the condition of things described, and I will only say that, with a prosperous agricultural class, the Government demand might be very largely increased without exceeding the half net asset standard; and that at present the bulk of the profits of agriculture are finding their way into the hands of the money-lending class. I see no reason why, if things are left alone, the proprietary rights should not in time pass bodily away from the agricultural class.

Connection between this
and Government revenue
demand.

I can find nothing to show that the indebtedness is in any way to be attributed to the pressure of the Government demand. The manner in which the money-lenders have fixed on the

tract, and their willingness to advance any amount on the land, shows what a profitable investment it is. I do not think that a complete remission of the revenue would much benefit the mass of the agriculturists, who are too far involved to extricate themselves. A heavy assessment might have the result of keeping off the money-lender; but I was not prepared to make any proposal in this direction. When the people themselves complain of their indebtedness, it is not generally with a view to having their assessment decreased; but they ask that some arrangement may be made between them and the money-lender. They attribute their difficulties, and rightly I think, to this that they cannot get the full value of their produce or cattle, and that their accounts are turned over and compound interest added so frequently. A small debt, which has at first been neglected, soon gets too large to be bearable.

223. There is an increase in cultivation of less than 2 per cent.,
plough-cattle are shown as being 8 per cent.

Increase in resources.
in excess of what they were at the Regular Settlement; but it is clear that the condition of the tract is stationary, and that the produce-growing area has not been extended. Neither is there any apparent advance in the system of agriculture or in the productive power of the soil. An enhancement of the revenue must therefore be based entirely on the increase in the value of produce. Referring to the note on prices in Appendix XII, we find that there has been a rise in the prices of the three principal products (comparing the two periods of 20 years, 1840-59, 1860-79).

Per cent. of area.	Crop.			Per cent. of increase in price.
43	Wheat	...	...	58
18	Maize	...	...	62
12	Sugar	...	...	40

On the other hand, the population increased between 1854 and 1868 by 14 per cent., and we have nearly the whole tract in the hands of the worst class of husbandmen, and a large proportion of these involved in debt.

Former rates.

224. The revenue rates adopted at last Settlement were :—

	Irrigated.	UNIRRIGATED.				
		Niál sailáb (dofasli.)	Rousli and Dákhar.	Bhúr.	Jadíd.	Qadím.
Rato ...	3-10-0	3-10-6	1-6-9	0-12-9	0-9-6	0-4-8
Area ...	188	4,638	10,804	25	338	4,619

The assessment announced was 9 per cent. under that given by these rates. Soil rates were used for distribution in only two villages and the details are—

Irrigated.			Niál Sailáb.			Rousli, &c.			Bhúr.			Jadíd.			Qadím.		
Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.
8	4	2	2	11	6	1	5	0	0	12	0	0	8	8	0	4	6

The returns show 2,884 acres, or 18 per cent. of the cultivated area,

Cash rents. as under all tenants paying nothing or a cash rent; and 1,564, or 10 per cent., under tenants-at-will so paying. Of this latter 66 acres are rent free, and 368 acres pay at revenue rates only. We may exclude these latter from our calculations, for it is land lent to relations &c. for cultivation gratis, and not properly rented. Leaving out the irrigated area, we have left, with land that pays rent in addition to revenue, 1,120 acres ($6\frac{1}{2}$ per cent. of the cultivation) paying a rent of Rs. 6,720, or at the rate of Rs. 6 an acre.

To the east of the Samrála Bét lies that of Rupar (Amballa district). The proportion of irrigation is about the same in both (2 per cent.); but the returns show that the proportion of *dofasli* and sugarcane land is considerably greater in Samrála now than it

Rates in neighbouring
Bét tracts. Rupar Bét.

was in Rupar at the last Settlement (1852). The Rupar rates are: Irrigated, Rs. 3-14-0 against our proposed rate of Rs. 4-0-0; and unirrigated, Rs. 2-0-6 against Rs. 2-2-9. As far as I have seen the Rupar Bét I think that it is inferior to that of Samrála in natural advantages, being a good deal cut up by such streams as the Budki, which cause deterioration to a large area of land. The cultivation in Samrála is undoubtedly superior; and the area under sugarcane more than double that recorded for Rupar; but besides this the Rupar rate is that of the last Settlement, and it is almost the same as the Regular Settlement rate for Samrála. The proportion of bad *málguzárs* is much the same in both tracts.

Opposite Rupar is the Garshankar Bét (Hoshiárpur District), with *defasli* 18 per cent., sugar $4\frac{1}{2}$ per cent., and irrigation 2 per cent., at the time of the Regular Settlement, and paying Rs. 2-7-1 an acre. Mr. Melvill assessed both, and states in paragraph 125 of his Amballa Report that the latter tract is much superior. Directly facing Samrála is the Nawashahr or Ráhon (Jálandhar) Bét; and there is probably little difference between the two. In fact 15 of the villages now in Samrála were at Settlement in the Ráhon Bét, and have come over by change in the course of the River. The Ráhon rate is Rs. 2-12-0 an acre.

If it were fair to make the comparison with native territory I might point to the Patiála villages belonging to the Khumánonjágir, which are in the very middle of the Samrála Bét tract; and pay at least double what our villages do. The jágirdars appear to fix their own demand; and the rates are consequently higher than elsewhere in Patiála. In Mauza Hedon, one of these villages, the collections are at the rate of about Rs. 5 an acre, while in the adjoining village of Bairsál in our territory the rate is Rs. 2-2-0. In the latter village the people are all involved in debt, and the revenue is with difficulty realized; while in the former the demand is paid and the people are at all events free from debt, and in fact cannot get credit.

The following statement shows the chief features and the rates in the tracts with which comparison may be made:—

District.	Tahsil.	Per cent. irrigated.	Per cent. <i>defasli</i> and sugar.	Rates.			
				Irrigated.	Unirrigated.	General.	Rainfall.
				Rs. As. P.	Rs. As. P.	Rs. As. P.	Inches
Ambala ...	Rupar ...	2½	{ 25 } 5 } 30	3 14 0	2 0 6	2 1 3	32
Hoshiárpur ...	Garshankar	2	{ 18 } 5 } 23	3 12 9	2 6 9	2 7 1	33
Ludhiána ...	Samrála ...	2	{ 28 } 14 } 42	4 0 0	2 2 9	...	27
Jálandhar ...	Nawashahr	...	...	...	...	2 12 0	26

225. Some discussion took place as to the revenue rates to be adopted for this Circle. Owing to the high rate at which rents in kind are paid it was recognized that the assessment must, in the very depressed condition of the tract, be much under the half-asset estimate. The following statement shows the revenue rates finally adopted and their result :—

SOIL.	Area in acres.	Revenue rate.	Resulting Jama.	Half-asset estimate.	Former assessment.
		Rs. As. P.	Rs.	Rs.	Rs.
Irrigated	293	4 0 0	1,172	1,493	...
Dofasli	10,897	2 10 0	28,604	35,305	...
Ekfasli	4,995	1 8 0	7,492	8,906	...
Total	16,185	2 4 10	37,268	45,704	32,503

The calculated increase by these rates was 4,765 or 13 per cent. ; but, owing to the necessity of assessing lightly new alluvial lands, it was expected that the village assessments would fall short of the sum. In this and the other Bet Circles the areas given in the Assessment Reports were those of 1879 ; and the rates were actually applied to the area as we found it in the years of announcement (1880-82). The assessments, former and new, and the result of the rates actually reported, were as follows, the differences being due to changes in the land subject to alluvion and diluvion :—

	Rs.
(1). Demand for 1880-81	= 32,234
(2). Assessment by the sanctioned rates	= 38,468
(3). Actually announced	= 37,063

an increase of Rs. 3,829 or 12 per cent. This increase is a small one ; and it was on the whole distributed evenly over the villages. I do not think that this amount of enhancement is likely to make much difference in the condition of the tract ; and, if regard be had to the productive power of the land, the new assessment is moderate, for the tract is a very fertile one. The greater part of the proprietors, and certainly all the Mahomedan Rájputs, are hopelessly involved in debt, and the only measure that could do them any good would be the suspension of the action of the ordinary Civil Courts.

LOWER DHAIA CIRCLE.

226. This consists of a strip of land just under the High bank, and the Dháia proper, or land over it. The former belongs to villages which have also land in the Dháia, and I have thrown the whole area of them into this Circle for convenience. The total area is 31,482 acres (con-

tained in 30 villages), of which 25,035 or 79 per cent. are cultivated, 2,461 culturable or lately abandoned, 2,514 unculturable waste, and 1,472 Government property (land under the Canal and roads).

The Bét portion of the Circle is for the most part very fertile, the land sloping down to the Budha nála, where this stream is at a little distance from the High bank. The soil is generally lighter than that of the rest of the Bét, there being a mixture of sand from the Dháia with it, and produces splendid crops of sugarcane and cotton, &c.; and there is also some good irrigated cultivation. But to the east about Poáwat and Bahlolpur the Budha is close under the High bank, and there is a great deal of swamp, the land being all to the north of the stream.

The Dháia proper is a tract with an uneven surface and a light sandy soil, which shifts about under a strong wind, and is blown into hillocks. Ordinarily it has the appearance of a desert; but the soil is very retentive of moisture, and under favourable circumstances good crops are grown. The Kharíf crop is mostly *moth*, for the growth of which the soil is adapted. With a light rainfall, when better land will bear nothing, fair Rabi crops of wheat, or wheat and gram, are grown; but they are liable to be buried under the shifting sand. A good rainfall, such as suits soils with more clay in them, is bad for this.

Round the villages are the wolls, and the land attached to them is generally superior and highly cultivated; but there is a continual struggle to keep out the drifting sand. For this purpose trees (the "ber" generally) are planted, or hedges put up as barriers. The worst villages are those adjoining the High bank. The surface in them is very hilly, and the soil therefore more liable to shift. The villages adjoining the Upper Dháia Circle have generally a more level surface; and, though the soil is poor, the crop is not so subject to injury from drift. But altogether the tract is an inferior one as regards natural advantages. The proportion of soils is for Dháia portion:—

Bhur or sand	...	...	63 per cent.
Rousli or sandy loam	...	...	30 "
Irrigated	...	...	7 "

The Rousli is all very light.

227. The percentages of area under the principal crops are:—
Crops and husbandry. For the Bét.

Rabi, 37.	Wheat	...	31	Kharif, 63.	Sugar	...	20
					Maize	...	17
					Rice	...	8
					Cotton	...	7
					Charri	...	7
					Others	...	4
	Others	...	6				

The proportion of land under the higher crops is greater here than in the Bét Circle. For the Dháia portion the figures are :—

Rabi, 51.	Wheat	28	Kharif, 49.	Cotton	2
	Wheat and gram	17		Maize	2
	Barley and gram	4		Moth	37
	Others	2		Charri, &c.	6
				Others	2

Very little sugarcane is grown in the Dháia, and the large proportion of area under *moth*, which is only sown in the sandiest lands, and is a very inferior crop, is a proof of a poor soil. The yield of superior crops in the irrigated land is not good ; and the unirrigated crops are all poor and stunted in comparison with those of the Bét and Upper Dháia.

The system of cultivation in the low lands is the same as that described for the Bét Assessment Circle. There are some wells under Máchiwárah, &c. ; and superior garden cultivation at them, crops of vegetables, tobacco, &c., being raised. The land sloping down to the Budha nála is heavily manured and richly cultivated. In the Dháia portion of the Circle the wells are grouped round the village site ; and the cultivation at them is fair, though in places the best land sometimes gets covered with sand. Sugarcane is grown, and double crops of maize or cotton followed by wheat, barley or fodder. Appendix I gives an area of 10 acres to each well, or $6\frac{1}{2}$ to each bucket. There are no outlying wells ; and the distinction between *Náá* and *Kháá* is not worth maintaining. Of the irrigated area 75 per cent is twice cropped or under sugarcane. The unirrigated cultivation is almost entirely on the system called *dofasli dosála*.

228. Hindu Jats hold 49 per cent. of the area ; Mahomedan Jats, 27 per cent. ; and Mahomedan Ráputs, 7 per cent. The Mahomedans are found in the villages on the High bank just over the Bét ; and the character given to those in the Bét applies to them. The Hindu Jats are not so well-to-do as men of their class generally. They are for the most part industrious ; but the soil is very inferior and yields only a poor return for their labour, and they find it difficult to subsist. Of the cultivated area 938 acres (or $3\frac{1}{2}$ per cent.) are held by tenants with rights of occupancy, and 6,226 (or $24\frac{1}{2}$ per cent.) by tenants-at-will ; in all 7,164 acres or 28 per cent.

229. About six per cent of the whole area has been sold since Settlement, and of this two-thirds to strangers of the money-lending class ; while eight and a half percent. is mortgaged with possession, three-fifths to strangers. The prices per acre are Rs. 18 for sale, and Rs. 15 secured by mortgage ; and the low averages show that the land is not valued as an investment. There is not much debt outside of these figures, for money cannot be raised without the security of the land. Complaints are made very generally ; and a good many of the villages are badly off. Discontent is general, and there can be no doubt that the tract is by no means in a flourishing condition—a result that may be

attributed chiefly to the poverty of the soil. The assessment of the Settlement Officer in 1852 was not very well received; and was revised in 14 out of 30 villages by the Commissioner, who gave a reduction on the whole jama of $4\frac{1}{2}$ per cent.

230. There is a decrease of population shown between 1854 and 1868; and there has probably been no increase since the Regular Settlement. In fact the tract is not capable of supporting more people than it now has, for there is no room for expansion of the resources. I have come across many instances of proprietors living on the money that they could raise on their land till this was exhausted, and then going away to seek a livelihood elsewhere. There is a decrease shown in the cultivated area, due to the land that has been taken up for the Sirhind Canal; but for this the former and present areas would be the same. The Canal runs along the whole length of the Circle and has cut up the best land of a few villages, passing close to the site. The loss of such a large area (1,472) must have deprived a good many people of their means of subsistence and diminished the resources of the tract. On the other hand, the Canal may give occasional employment to some, and has already done so. There is a decrease of 200 acres or 6 per cent. in the cultivation of the Bét portion, due to land being permanently swamped; while, if we exclude the area taken up for the Canal, there is a slight increase of cultivation in the Dháia land. Irrigation has increased 10 per cent., the increase being chiefly in the Bét. The other statistics point to the tract being stationary in every way; and, if we are to take an enhancement of the assessment, it must be based entirely on the rise in prices. But the amount of surplus produce available for sale is very small, and the Dháia proper can do little more than support its population.

231. The jama by the Regular Settlement revenue rates was Rs. 29,437; but the actual demand was fixed at Rs. 27,587. This was reduced to Rs. 26,324 by the Commissioner in 1855; and has fallen on account of remission for the Canal land taken up to Rs. 25,440. In 9 villages the jama was distributed by rates on soils. I give below for the Dháia proper the rates adopted by the Settlement Officer (revenue rate jama) and those used for the distribution.

				AVERAGE.			
				Revenue rates.	Distribution ("Tafrik") rates.		
				Rs. As. P.	Rs. As. P.		
Níái	...	...	...	5 4 3	3 5 0	} With rates on jadid and qadim (fallow and culturable.)	
Khália	...	...	...	2 1 0	2 1 6		
Roush	...	...	...	0 15 6	0 12 6		
Bhúr	...	...	...	0 12 6	0 9 3		

Most tenants pay in kind, because the harvest is so uncertain.

Cash rents. The area under tenants-at-will paying in cash is 1,522, or 6 per cent. of the cultivation; but of this 663, or nearly half, pays revenue only. The area actually under competition cash rents is 700 acres or less than 3 per cent. Most of this is in the Bét portion of the Circle, and the area of the Dháia so held is less than 2 per cent. of cultivation. The rent statistics for the Dháia land such as they are, I give:—

Paying at a rate on the biga.

Irrigated.			Rouslí.			Bhúr.			Mixed.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.
7	49	7-0-0	19	38	2-0-0	46	66	1-7-0	35	87	2-7-9

Paying lump sums.

Irrigated.			Rouslí.			Bhúr.			Mixed.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.
41	469	11-6-0	37	93	2-8-9	63	115	1-13-6	183	509	2-12-0

Revenue rates sanctioned and results.

232. The revenue rates finally sanctioned and their results are shown in this statement:—

Soil.		Area in acres.	Rate.	Resulting jama.	Half-asset estimate.	Former as- sessment.
Bét.	Irrigated ...	173	Rs. As. P. 4 8 0	773	1,111	
	Dofasli ...	2,275	3 0 0	6,825	9,193	
	Eklasli ...	948	1 12 0	1,659	2,374	
Dháia.	Cháhi ...	1,311	3 0 0	3,933	4,771	
	Rouslí ...	641	1 0 0	6,411	5,074	
	Bhúr ...	13,917	0 10 0	8,698	8,389	
Total ...		25,035	1 2 1	28,299	30,912	25,892

The above gives an increase of Rs. 2,407 or 8 per cent. The assessments actually announced amounted to Rs. 28,154, and were well received. The tract is a very poor one; but the assessment was and still is very light; and there is some very good land in the villages adjoining the Bét, and again in those next to the Upper Dháia Circle.

THE UPPER DHAIA CIRCLE.

233. This Circle contains 175 villages with a total area of 126,324 acres, of which 107,750, or 84 per cent., are

General description. cultivated; 8,627, culturable or recently out of cultivation; and 9,947, Government property or unculturable waste. It stretches south from the Lower Dháia in a plain of uniform surface except where two belts of sand, each of about one mile in width, run across it from north-east to south-west.

The soil varies from a stiff clay to a light sand, the latter being found in the neighbourhood of these belts, and the former in depressions. The prevailing soil is a good loam, generally of dark colour, friable and most fertile. The proportion of soils according to our present classification is—

Irrigated	...	...	42 per cent.
Unirrigated	Dákhar (clay)	...	3 "
Ditto	Rouslí (loam)	...	43 "
Ditto	Bhúr (sand)	...	12 "
Total			100 per cent.

234. The percentages of area under the principal crops are—

Rabi, 48 per cent.	Wheat	...	26	Kharif, 52 per cent.	Sugar	...	5½
	Wheat or barley and gram	...	13		Cotton	...	7
	Barley or gram alone	...	7		Maize	...	9
	Others	...	2		Moth	...	9
					Charri	...	11
					Moth and Charri	...	8
					Others	...	2½

The husbandry of the tract need not be described in detail after the general account given in paragraphs 104 and 105 of this Report.

235. Of the revenue-paying area 80 per cent. belongs to Hindu Jats; 8½, to Mahomedan Rájputs; 2½, to

Tribes and tenures. Mahomedan Gújars; and 2½, to Mahomedan Jats. The Hindu Jats are a most industrious and thrifty class; and it is fortunate that the proportion of them is so large. The Mahomedan Rájputs are notorious for their improvidence; and are the worst possible revenue payers. At the Regular Settlement this was fully

recognized, and allowance was made in the assessments of their villages : but I do not think that such consideration has much effect on their condition. They are, as a class, very much involved in debt ; and their villages contribute most of the area in the return of sale and mortgage. I have seen in many places the land of a Rájput village mortgaged to the neighbouring Hindu Jats, although the latter were paying a much higher assessment on their own than the Rájputs. All Mahomedans are put at a disadvantage by the custom which prevents the female portion of their households from assisting them in out-of-door work, whereas every member of a Hindu Jat's family gives him some help. It is to this that all Mahomedans attribute their bad success as cultivators, but it is only one reason. A Rájput will, if possible, rent his land to some one else, and thus save himself all trouble. If he is compelled to cultivate it, he does so in a most perfunctory manner, ploughing once for every three or four times that the Jat does.

236. The returns show one per cent. of the total area sold since Settlement, but nearly three-fourths of this has

Condition of tract, debt &c.; small proportion of area transferred; and value of land.

gone to coparceners. The average price realized is Rs. 35 an acre. The land mortgaged with possession of the mortgagee amounts to four and a half per cent. of the whole, and of this nearly one-half is in the hands of members of the village community. The whole area transferred to the money-lending class proper by sale and mortgage is thus about two per cent. The amount secured per acre on usufructuary mortgage is Rs. 27. The inference to be drawn from these figures is that a very small portion of the land has changed hands, and that very little of it has gone to the money-lending class. The ordinary Jat is most tenacious of his land, and will submit to any thing rather than that it should go out of his possession. If he cannot raise money without a mortgage, he will retain a part of his holding, and take the first opportunity of redeeming. The price paid for the land shows how it is valued.

My own experience of the tract agrees entirely with the result of these statistics. The people are uncommonly well-to-do, except in some of the Rájput villages where the thriftless habits of the land-owners are bringing them to ruin. But the money-lender has scarcely any hold at all on the Jats, nor is he ever likely to have more. There is a good deal of hard cash amongst them; and, if one of the number is in difficulties, he can always find some of his fellows to make an advance on the usufruct of a part of his land. There is of course a certain amount of floating debt; but this is no more than a couple of good harvests will clear off. If a money-lender has got a hold on the borrower he will insist on having the land and receiving a share of the produce; and it is a sure sign of the temporary nature of the debt when the land remains with the proprietor. There are not many external signs of prosperity such as one is led to expect

from the experience of other districts. The people are very fond of their money, and waste none of it on show. The houses are neat, but have seldom any pretensions. A well-to-do Jat has no horse and not more cattle than he absolutely requires. He dresses very plainly, and spends little on the clothes and food of his family. His great aim is to get some more land into his hands; and he will keep his savings till a chance occurs of investing them in a mortgage. The best evidence of the prosperity of the agricultural population is that they can always dispose of their surplus produce to whom they like, and when they like. In most houses will be found stocks of grain or cotton more than sufficient for the use of the household, and kept in the hopes of a rise of prices. The *gur* is bought up from them as fast as it is made. They have not even the trouble of taking their produce to market, for there is a keen competition between the traders, who go amongst the villages and buy on the spot. The Jats are careful to get a good price; and the margin of profit left to the trader is never excessive.

237. Notwithstanding the large area taken up for roads, canals, &c. there has been an increase of 7 per cent. in cultivation, 4 per cent. in irrigated, and 10 per cent. in unirrigated. The masonry wells have increased by 6 per cent.; ploughs are shown as having increased by 13 per cent.; and plough-cattle (bullocks) by 16 per cent. These latter figures are probably near the truth. The former details of "other cattle" are unreliable; and there has not been any increase in them, I should think, for there is no attempt to rear cattle for sale. No waste land is left, and fodder is valuable, so that the people much prefer to buy bullocks and cows ready for use and to sell the young stock.

238. I give below a statement showing the revenue soil rates adopted at the Regular Settlement, and those used in the villages in which the assessment was distributed on soils (26 out of 175). The revenue rate jama was 10 per cent. above that actually imposed.

Soil.				Revenue rates.			Distribution rates.		
				Rs.	As.	P.	Rs.	As.	P.
Irrigated	...	Nái cháhí	...	6	12	3	4	14	0
		Khális cháhí	...	2	8	10	2	5	0
Unirrigated	...	Rouslí and Dákhar	...	1	6	8	1	4	2
		Bhúr...	...	0	14	6	0	13	6

The following statement, condensed from Appendix IIB, shows the cash rents of the Circle. I have been able to obtain reliable data as to cash rents from the annual papers of two or three villages only:—

Cash rents.

I.—Paying zabti or crop rates.

SUGAR.						COTTON.					
NIAI.			KHALIS CHAHI.			NIAI.			KHALIS CHAHI.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.
136	1,628	12-0-0	141	1,648	11-11-9	28	206	7-5-9	40	263	6-9-2

MAIZE.						CHARRI.		
NIAI.			KHALIS CHAHI.			Rousli baráni.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.
27	275	10-2-6	26	240	8-7-0	456	2,034	4-7-6

II.—Paying at an annual rate on the biga.

NIAI.			KHALIS CHAHI.			ROUSLI.			BHUR.			MIXED.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.
69	585	6-9-2	304	1,755	5-12-6	851	3,716	4-5-9	21	68	3-4-0	352	1,957	5-9-0

III.—Paying lump sums for the year.

NIAI.			KHALIS CHAHI.			ROUSLI.			BHUR.			MIXED.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.	Area.	Amount.	Rate.
27	2,811	9-7-6	473	3,554	7-8-6	543	2,510	4-10-6	73	174	2-6-6	2,884	13,422	4-10-9

The annual papers of three villages give—

SUGAR (IRRIGATED.)			LUMP SUMS (UNIRRIGATED.)		
Area.	Amount.	Rate.	Area.	Amount.	Rate.
35	377	11-1-9	3-866	13,897	3-9-6

A detailed analysis of the rents show that II does not give the proper relations between irrigated and unirrigated land. It is usual in some villages to take rent at a general rate per *bíqah*, irrespective of irrigated and unirrigated; and, when we distribute this over the area in our returns, we get a result that is misleading. The general rate is fixed for the convenience of the proprietor, and does not mean, as our returns would show, that all the land has the same renting value. Thus in mauza Raháwan, where the proprietors are Rájputs who cannot cultivate their own land, a general rate of Re. 1 a *kacha bíqah* (Rs. 5 an acre) is charged for all land; and, when we have distributed this over the whole rented area, we get the result—

IRRIGATED.			UNIRRIGATED.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.
124	590	4-14-0	381	1,750	4-9-0

Giving nearly the same rate for irrigated as for unirrigated land, neither being the true rate. For this reason the irrigated rent rate in II is too low; and consequently the unirrigated too high. Again, if we take the lump sum rates of villages where land is scarce, we get a much higher rate than where tenants are scarce. Thus the irrigated lump sum rates for Isru, Nasráli, Aikoláha, Utálan, Bhamadi (5 villages) give—

NÍAI.			KHÁLIS.		
Area.	Amount.	Rate.	Area.	Amount.	Rate.
		Rs. A. P.			Rs. A. P.
68	812	12 0 0	159	1,431	8 0 0

On the other hand Kheri, belonging to the *jágirdárs*, who find tenants with difficulty, give rates—*níai*, Rs. 7; *khális*, Rs. 4. The crop rent rates are a much better index of the relative values of land. The

area under cash rents is not sufficiently large to eliminate such discrepancies as these; and we must bear in mind that 80 per cent. of the whole land is in the hands of cultivating proprietors, and 10 per cent. more held by tenants paying in kind.

239. In framing my rates I kept all these considerations in view—the former rates (revenue and distribution), cash and kind rents, and the relative renting value of the different soils. My rates as compared with those of the former Settlement are—

SOIL.	REGULAR SETTLEMENT.		
	Revenue rate.	Distribution rate.	Rate proposed.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Niái	6 12 3	4 14 0	4 12 0
Khális	2 8 10	2 5 0	3 8 0
General rate on well land	4 6 6	.....	3 15 0
Rousli and Dákhar	1 6 8	1 4 2	1 6 0
Bhúr	0 14 6	0 15 6	0 14 0

There are former rates on fallow and culturable waste; but I proposed none. The results of the application of these rates were :—

SOIL.	Area.	Rate.	Jama.	TOTAL.
		Rs. A. P.	Rs.	Rs.
Niái	16,049	4 12 0	76,236	
Simple well	28,791	3 8 0	1,00,765	
Other irrigation	28	3 0 0	84	
Rousli	49,536	1 6 0	68,112	
Bhúr	13,346	0 14 0	11,678	2,56,875

The assessment of the last year of the Regular Settlement, including máfi jama, was Rs. 2,07,296; and the proposed assessment would have given an increase of Rs. 49,579 or 24 per cent. In reviewing the Report the Financial Commissioner recorded the following orders:—

"The Financial Commissioner thinks that the reasons given for proposing these rates are sufficient and he sanctions their adoption. They are, in the Financial Commissioner's opinion, better proportioned than those fixed at the Regular Settlement, and are fully justified by the statistics of rent and produce. They are however still a little higher on well land than Mr. Lyall likes; and any approach to putting too much on well irrigation is of course to be most carefully avoided. He therefore agrees with you that a larger increase than 20 per cent. should not be taken. The Settlement Officer should in assessing practically reduce the well rates so as to make the new rates give an increase of 20 per cent. only, and he should also be very careful how he assesses villages in which the proprietors' holdings are very small." (No. 7106, dated 10th October 1881, from the Settlement Secretary to Financial Commissioner, Panjáb, to the address of the Settlement Commissioner). His Honor the Lieutenant-Governor in formally sanctioning the instructions of the Financial Commissioner said: "In agreeing to the announcement of the assessments the Lieutenant-Governor requested the Financial Commissioner to impress upon the Settlement Officer the necessity for treating with care and leniency those villages in which, from the small size of the holdings, an increase was likely to be felt, and His Honor further considered that 20 per cent. should be the maximum increase to be taken on the Upper Dháia circle. It is observed that in Mr. Lyall's belief, the holdings are not, as a rule, very small in Ludhiána. But the average size of proprietors' holdings should, as is now proposed, always be noticed by Settlement Officers in Assessment Reports. In the present instance, observation should be particularly directed to the effect of the new rates upon the petty properties; and there should be no hesitation in granting immediate relief wherever it appears to be required. The subject should be fully discussed in the final report in the light of the experience which will accumulate in the interval." (No. 103, dated 3rd April 1882, from the Secretary to Government, Panjáb, to the address of the Financial Commissioner). I have quoted these orders in full because the Assessment Report of this Tahsíl was the first submitted, and the orders on it were my guides in the treatment of the rest of the district. The actual results reported in form E (detailed village assessments) for this Circle were as follows:—

	Rs.
Jama of the last year (with máfi, &c.)...	2,07,643
Jama announced ...	2,46,293
Increase ...	38,650 or 19 per cent.

This increase was somewhat under that directed; but I found that there were several Mahomedan villages in which we had to go very far below rates; and I preferred reporting the deficiency to attempting to make up the sanctioned total by taxing the industry of the good cultivators. With the exception of these villages the enhancement was evenly distributed over the tract, and the new assessments were well received. The holdings are smallest in the older villages like Isru and Utálan, and the instructions of Government were acted on in the treatment of such as were made up of attenuated properties; but the difference between

one village and another in this respect is seldom very great in the Samrāla Tahsīl; most of them being on the same level. Where the holdings were below the average size, this was usually found to go along with a larger proportion of irrigation, an intensified condition of agriculture, and a very high rate of assessment; and the new revenue rates seldom indicated much of an increase in such cases. For further information on this point I would refer to the village note-books.

TAHSIL LUDHIANA. THE BET CIRCLES. BET I—KACHA.

240. In paragraph 202 I have given reasons for subdividing the Bét of this Tahsīl into three Circles. The first General description. Circle for consideration is the *mand* or strip of land along the margin of the River; and I have included in this only the villages of which the greater part of the area is liable to annual inundation. The Circle contains 15 villages with an area of 8,757 acres, of which only 2,677, or 30 per cent., are cultivated; 3,487, or 39 per cent., culturable; and 480, or 5 per cent., lately abandoned. The remainder, 26 per cent., is unculturable. The small proportion of cultivated area to culturable and barren is not to be wondered at in a tract like this. The unculturable is sand along or in the bed of the River, and the culturable is the ordinary new land found on its banks, covered with a growth of "pilehi" or of reeds. Most of this will eventually be cultivated, unless destroyed by the River. Of the area lately abandoned 272 acres are in one village, having been cultivated one year to secure possession (as the land was in dispute), and never again. The land of this Circle is nearly all liable to annual inundation: and people live in adjoining villages of the *packa* Bét, and sometimes in a corner of their own, as the land is under water during most of the hot weather. The silt left by the overflow of the River is generally very fertilizing, and the land is really renewed annually. The soil is a clay-loam on a substratum of sand. When the deposit has attained a depth of nine inches to a foot, the plough can be worked in it without bringing up the sand, and cultivation is possible. But good crops cannot be grown unless the sand is from one to three feet distant from the surface, the further the better.

Crops and husbandry. 241. The percentages of area under the various crops are:—

Wheat	...	...	48	Maize	...	...	20
Barley	...	...	7	Rice	...	...	3
Barley with <i>masar</i>	...	...	7	Sugar	...	...	3
Others	...	...	7	Charri	...	...	3
Total Rabi	...	...	69	Others	...	...	2
				Total Kharif	...	...	31

The irrigated area is insignificant. In *dofasli* land the crops are maize, and sometimes rice, followed by wheat or barley, or a single crop of sugar or cotton is grown. Manure is not much used except for the cane, as good crops of maize and wheat can be raised in succession without it. *Eksasli* land, when newly broken up, is cropped for two or three years with a mixture of barley and *masar*; and then it becomes capable of growing wheat. There is little or no Kharif crop in the *ekfasli* land, for it lies low and cannot be sown in time. The *dofasli* land is so situated that the water drains off it in time to enable the cultivator to sow maize, or the crop is rice. The wheat crop is magnificent, the yield being equal to that of irrigated land in the Dhiáa; and the maize, too, is good. Rice is grown in the wet lands near the river. It is in the ground only 40 to 50 days and may be followed by other crops.

242. The land is held by the various Tribes of proprietors. tribes, thus :—

Mahomedan Rájputs	...	...	57 per cent.
Ditto Gújars	...	...	10 „
Ditto Jats	...	...	14 „
Hindu Lobánas and Binjáras	...	...	16 „
Others	...	...	3 „
Total			100 per cent.

The Mahomedans are not well suited to the ups and downs of an alluvial circle, but they are fairly well-to-do. The Binjáras engage a good deal in trade, and do not depend entirely on cultivation.

243. Of the total area less than one per cent. has been sold since the Regular Settlement, and eight per cent. is now held in mortgage. The price in Condition of the tract. the case of sale is Rs. 40 an acre, and the mortgaged money per acre Rs. 17. The whole area mortgaged has gone to money-lenders; but it is made up almost entirely by one Rájput village (Satíanah), of which the whole land (565 acres) has been mortgaged. With the exception of this one village the Circle is in good condition. The produce is excellent and the people keep out of debt, and are generally well-to-do. But they are of course liable to lose their land any year from the action of the River. The Regular Settlement gave a large reduction on the jama of the Summary Assessment, and was 20 per cent. under rates. The present assessment is very light.

244. A comparison of the former and present resources is not of much use in a Circle like this, where the Former and present statistics. assessment varies with the cultivation. The incidence of the present population is 522 to the square mile of cultivation.

245. The Regular Settlement revenue rates were :—

Regular Settlement rates.		Rs. As. P.	
Irrigated	...	2	10 0
Dofasli	...	2	5 8
Eksasli	...	1	4 3
Jadíd	...	0	4 7
Qadím	...	0	5 5

The jama actually sanctioned was 20 per cent. below that given by rates. Soil rates were not used in any village for distributing the assessment.

No cash rents. There are no cash rent statistics except of a small area of sugarcane, which pays Rs. 9 an acre.

The following statement shows the rates sanctioned and their result as compared with the produce estimate :—

Soil.				Area.	Rate			Resulting assessment.	Half-asset estimate.
					Rs.	As.	P.		
Irrigated	...	...	...	24	3	12	0	90	141
Dofasli	...	...	...	1,283	2	12	0	3,558	4,798
Ektasli	...	...	...	1,370	1	12	0	2,397	2,858
Total	...	...	...	...	...	...	...	6,045	7,797

As in Samrála it was expected that the village assessments would fall short of the above total on account of new land favourably assessed; and in the case of the land included in the *kacha chak* (see the account of the system in Chapter IX) *dofasli* rates of Rs. 2-10-0 and Rs. 1-10-0 were to be applied instead of the full rates. The assessments announced and reported amounted to Rs. 4,900, as against a total by rates of 5,039, there having been considerable changes in the area of the report as in the case of Samrála; and the enhancement on the demand of the last year, Rs. 4,049, was 21 per cent.

BET I—PACKA.

246. *Bét I, Packa*, comprises the rest of the villages of the Bét portion of Bhartgarh and Sahnúwál parganas.

General description. It contains 57 villages with a total area of 32,048 acres, of which 21,237, or 66 per cent., are cultivated; 8,078, or 25 per cent., culturable or lately abandoned; and 2,733, or 9 per cent., barren waste. Part of the land of one or two villages is in the *mand* and subject to inundation, but with this exception the tract lies high, beyond the direct influence of the River. Towards the High bank, too, very few villages adjoin the Budha nála, which runs for the most part through the Bét portion of the Lower Dháia Circle. There are a good many *nálas* or streams running across the tract, which fill in the rains, but seldom overflow their banks. The soil, like that of Bét lands generally, is a stiff dark clay-loam on a substratum of sand, very fertile when properly cultivated. The water level is near the surface, and there is always abundance

of moisture. In places there is tendency to *kallar*; but this is not common, and land so affected is mostly uncultivated. Sand ridges occur, but the sand does not shift.

The stratum of clay is shallow here and there, and the sand appears on the surface; but, as a rule, the clay reaches to five or six feet below the surface. Irrigation is everywhere easy, as water is found at a depth of eight to twelve feet, and it is more common than in Samrála. The proportion of irrigated land is 5 per cent. of the cultivated area of the whole Circle; but it lies mostly in the villages to the west. In the eastern part, as in the Samrála Bét, irrigation is not required, and superior or *dofasli* cultivation is carried on in the unirrigated land.

Crops and husbandry. 247. The percentages of area under the various crops are :—

RABI, 58.				KHARIF, 42.			
Crop.	Irrigated.	Unirrigated.	Total.	Crop	Irrigated.	Unirrigated.	Total.
Wheat ...	2½	46½	49	Maize	3	14	17
Barley ...	½	4½	5	Sugar	...	2	2
Vegetables ...	...	2½	2½	Cotton	...	3	3
Others ...	1	½	1½	Charri	...	13½	13½
				Others	1	5½	6½
Total ...	4	58	54	Total	4	38	42

In the Rabi wheat is grown as a single crop in *ekfasli*, or following maize in irrigated and *dofasli* land. Sometimes barley is sown instead of wheat. The "vegetables" are principally melons. In the Kharif maize is grown in the *dofasli*, and *charri* in the *ekfasli* lands. The proportion of sugarcane and cotton is small, the former being grown in a few villages adjoining Samrála, and the cultivation being apparently on the increase. The *dofasli* and irrigated lands usually lie close round the village site, are well tilled and heavily manured. The *ekfasli* land either bears a Rabi crop year after year (flooded lands); or is cultivated on the *dofasli dosála* system, that is a wheat crop is taken and then one of maize or *charri*, after which the land has a year of fallow. There is a considerable area of *ekfasli* land shown in our crop returns as growing maize or cotton, and for these crops manure is used; but the land is really *ekfasli*, for there is none of it that gives more than two crops in two years, and in fact the following crop of wheat cannot be taken. The cultivation

of the *ekfasli* land is difficult; and it is not altogether the fault of the cultivators that the tilth is not so good as in the Dhāia. The soil is naturally stiff, and a few weeks' rest produces a rank growth of thistles, "*piāzi*" &c., which it is not easy to keep down. Ploughing is very hard work, and has to be repeated much oftener than in the lighter Dhāia lands. Still the cultivation is slovenly, and would be improved by some exertion on the part of the cultivators. What they principally fail in is weeding. One sees whole fields of wheat choked with "*piāzi*" weed, which a Jat and his family would clear in a few days. The ordinary cultivator of the Bét thinks he has done his duty when he has sown the land, and seldom touches it again.

Agricultural tribes.

248. Of the whole area 93 per cent. is held by Mahomedaus, thus :—

Rájpúts	...	...	...	...	22
Gújars	...	...	...	...	34
Jats	...	...	...	...	19
Araiens	...	...	...	...	7
Others	...	...	...	...	11

Total 93

The "others" are made up of Awáns and Saiáds principally. The Hindus, who hold 7 per cent., are mostly Lobáns. The Rájpúts are bad husbandmen, and do not willingly cultivate their own land. The Jats and Gújars are more industrious and well-to-do.

249. The condition of the tract is better than that of the Samrála

Condition of the tract.

Bét — a result that I attribute principally to the small area under sugarcane cultivation; for, where cane is grown, the cultivator is driven to the money-lender. There is no such eagerness here on the part of the money-lenders to make advances to the agriculturists; and the latter are more thrown on their own resources, and, as a rule, incur debt only when compelled to do so for a marriage, on account of a bad harvest, or for some such cause. They ordinarily live on the grain that they grow themselves. Some of the villages, such as Kariáná, Baliewál, &c., are very prosperous; and few are really much involved, though proprietors in most will be found in debt. It cannot be said that there is a great deal of wealth in the Circle. The wheat and cotton are mostly sold; and good prices are realized for vegetables, which are bought by traders from the City, and for straw sometimes. The proportion of the agricultural population who are well-to-do, and can dispose of their own surplus produce when they like, is considerable; but not nearly so large as in the Dhāia. Such money as may be saved is generally kept in hard cash or invested in land. There is no display of brass dishes &c., for the Mahomedaus do not use them; and only sufficient cattle are kept for the use of the household, except by the Gújars who dispose of the milk and *ghí* produced by their buffaloes and cows.

Of the total area one and a half per cent. has been sold since the Regular Settlement, and six and a half per cent. is now in mortgage. Of the sales 33 per cent.

Sales and mortgages.

are to agriculturists, and of the mortgages 50 per cent., so that the area transferred since the Regular Settlement to the money-lending classes is less than five per cent. on total area, and six and a half per cent. on cultivation. The average price per acre is for sale Rs. 46, and for mortgage Rs. 34. There is good deal of money owed on book accounts, as might be expected from the character of the people, for Mahomedans seldom get on without the assistance of the money-lender; but the debt of this sort is not nearly so great as in the Samrála Bét, nor does it press very hard.

The difference in the rates of former assessment of the two tracts (Samrála Bét and this) is not greater than might be expected from the difference in quality of the produce (Rs. 2-2-0 in Samrála and Re. 1-13-6 here per acre of cultivation.) The Regular Settlement gave in this a large reduction (27 per cent.) on the Summary Assessment, which again was much under the average of the old collections, so that everything has been done to promote the prosperity of the Circle, so far as it could be affected by the revenue demand. The price of land is decidedly high, and speaks of a moderate assessment. The revenue is paid punctually, except in one or two Gújar villages, which would never willingly pay anything.

250. There has been an increase in cultivation of 12 per cent., and in irrigation of 22 per cent. *Kacha* wells, lined with wattles and worked with a "dhenkli," or pole and pot, have been almost entirely replaced by masonry wells, the number of the latter having increased from 46 to 107. There is an increase shown in the number of ploughs amounting to 45 per cent.; and of plough-cattle, 20 per cent. Our enumeration of cattle was not very carefully done; but the results are approximately correct. The people do not keep much stock beyond what is necessary for wells, ploughing, and dairy purposes; and an increase of cultivation is likely to act as a check on the increase of cattle where the extent of waste land for grazing is not excessive.

By the Census returns population increased 26 per cent. between 1854 and 1868; and only $2\frac{1}{2}$ per cent. between 1868 and 1881. The incidence per square mile of cultivation was at the time of Regular Settlement (1854) 511; and is now 588. In Samrála Bét the figures are 520 and 590 (Census of 1868). There has thus been a very material addition to the resources of the Circle since the Regular Settlement. There is, it is true, a much larger population to feed; but the increase has been small in the last 12 or 13 years. The present density is not excessive for a tract of such fertility.

251. The unirrigated area shown in the present returns as *dofasli* is very largely in excess of that so returned at the Regular Settlement. But our classification has been done on the principle explained in detail in paragraph 203. With a view to avoiding the

objection against the former classification, that it was too arbitrary because founded on the returns of only one year's crops, we have included in *dofasli* all land that appeared, after a careful observation of the crops of three years, to be ordinarily capable of bearing two crops in the year, or one of sugarcane. That there has been some actual improvement in the agriculture is seen from the fact that, while the increase in unirrigated cultivation is 11 per cent., the area of crops in the two harvests has increased by 14 per cent., and the sugarcane area has been quadrupled. Our present classification is designedly made much wider than the former one. That it is made very much on the same standard as that of Samrála is seen from an examination of the crop returns. A cultivated area of 7,016 acres gives 9,735 of crops in the two harvests, of which 362 are sugarcane, and 360 under cotton. That is 100 acres cultivated give 138 acres of crops, of which 5 are sugar, 5 cotton, and 2 indigo. It was to be expected that the proportion of *dofasli* to total cultivation would be much less in the Ludhiána than in the Samrála Bét, thus :—

			Dofasli.	Ekfasli.	TOTAL.
Samrála Bét	...	...	68	33	100
Ludhiána Bét	...	...	35	65	100

Dofasli cultivation in unirrigated lands is really confined to the villages in the east of the Ludhiána Bét, and about half way along it where there is no irrigation. In Matewára and the western villages the better cultivation is at the wells, and the unirrigated *dofasli* area very small. In the Núrúp Bét we find the proportion of *dofasli* unirrigated much smaller still.

252. The revenue rates of the Regular Rates : Regular Settlement. Settlement were:—

SOIL.						Rate.		
						Rs.	As.	P.
Irrigated	...	...	...	...	...	2	10	0
Dofasli	...	...	...	...	...	2	8	0
Ekfasli	...	...	...	...	...	1	6	3
Jadid	...	...	...	...	...	0	4	11
Qadím	...	...	...	...	...	0	4	6

In considering these rates regard must be had to the great improvement in the character of the irrigation ; and also to the alter-

ation of proportions between *dofasli* and *ekfasli*. The actual *jamās* also were about 10 per cent. under rates.

For distributing the revenue soil rates were used in five villages.

Distribution rates. These are *Matevāra* and four others in its neighbourhood, all villages in the western part of the Circle. The rates used were:—

SOIL.				Rate.			Area.
				Rs.	As.	P.	
Irrigated	...	...	...	2	11	3	156
Dofasli	...	...	...	2	9	6	428
Ekfasli	...	...	...	1	6	2	2,585

The area under tenants-at-will paying cash rent is 1,209, or 6 per cent.; but most of this (727 acres) is held rent free or for payment of revenue only, that is by relations of the proprietors, or by proprietors who have been wrongly shown as tenants. The area under competition rents is thus very small, and we need only refer to the lump sum and *zabti* or crop rates. The details for the former are:—

Soil.			Area.	Rent.	Rate of rent per acre.		
					Rs.	As.	P.
Dofasli	...	...	94	363	3	13	6
Ekfasli	...	...	189	466	2	7	6
Mixed	...	...	159	604	3	13	0

Cash rents are usually paid to absentee proprietors, and are not intended in many cases to do more than cover the assessment: and the rates do not represent the renting value of the land. It is a fact also that the worst land in the Bét is given to tenants paying in cash, and the whole area is small.

Revenue rates sanctioned. 253. The rates sanctioned and the resulting assessments are:—

SOIL.			Area.	Rate.	Resulting Jama.	Half-asset Estimate.
Irrigated	...	...	1,118	3 12 0	4,192	6,051
Dofasli	...	...	7,016	2 8 0	17,540	21,488
Ekfasli	...	...	13,103	1 7 0	18,836	22,704
TOTAL			.....	.....	40,568	50,243

There are some villages in this Circle too with new alluvial land, which had to be assessed favourably; and the assessments announced gave a total of Rs. 41,519, being an enhancement of 20 per cent. on the demand of the last year (Rs. 34,207), and the jama given by rates for the year of announcement being 41,602.

BÉT II.

254. Assessment Circle Bét II is the western part of the Ludhi-ána Bét and includes nearly the whole of pargana Núrúpúr. It is about twelve miles in length and four in breadth, and contains 67 villages with a total area of 41,305 acres, of which 26,121 or 63 per cent. are cultivated. There has been a loss by diluvion since the Regular Settlement of 14 per cent. of the total area, and some villages have lost almost the whole of their land. I have not separated off a *kacha* Circle, because there is very little good *mind*. Here and there fresh land has been thrown up in place of the old cut away; and to the east of the Railway embankment, about Kásabád, this is of fairly good quality and yields well. But there are no whole villages which we could throw into a separate circle. The soil of Bét II is for the most part much inferior to that of Bét I (*Packa*), and the rainfall is considerably less. The Budha nála is the boundary of the Circle to the south, and joins the River just outside it, so that all the land on the north bank of this stream is included. This is in parts very inferior, being either unfit for cultivation, or yielding very poor crops and that not every year. *Kallar* is more prevalent than in the eastern Bét, and barren patches are to be found in the best wheat fields, especially about Núrúpúr. As in Bét I irrigation is easy, water being at about the same depth. The proportion of irrigated land is 9 per cent. of the cultivation.

Crops and husbandry.

255. The percentages of area under the various crops are:—

Crop.	Irrigated.	Unirrigated.	Total.
Wheat	4½	42½	47
Barley	1	3	4
Vegetables	1	2	3
Others	½	2½	3
Total Rabi	7	50	57
Crop.	Irrigated.	Unirrigated.	Total.
Maize	5½	7½	13
Cotton ... ..	...	1½	1½
Moth ... ..	...	4	4
Charri ... ..	...	15	15
Others	2½	7	9½
Total Kharif	8	35	43

The irrigated cultivation is of the same sort as that of Bét I, the wells lying round the village site; and the land is heavily

manured and cropped with maize and wheat in succession. The unirrigated area is seldom capable of producing two crops regularly every year, except in a few villages with *mand* land, where a rather poor crop of maize or "másh" is followed by one of wheat: and there is really no *dofasli* cultivation such as in Bét I, save in a couple of villages in the eastern part of the Circle. In the *mand*, where two harvests are not attempted, one of wheat (or of barley mixed with *masar* in the new land) is grown in the Rabi. In the higher lands the cultivation is on the *dofasli dosala* system, the land yielding wheat and *charri* in succession, and then having a year's fallow. Vegetables and melons are grown in the *ekfasli* land of the villages under the city of Ludhiána; and have a ready sale, being bought up on the spot by vegetable sellers. The land of this Circle gets as manure most of the refuse of the City. None of this goes to the Dháia land, but a good deal to the Bét lands of Lower Dháia, and not much to Bét I. This manure is used largely for well land, and enables the people to raise wonderful crops even on the poorest soils. The Aráien villages, such as Rajowál and Bahádarke, are models of garden cultivation; some of the land yielding regularly three crops every year. "Ponda" sugarcane is raised in some villages and sold at a great profit. Onions, tobacco, &c., are commonly grown.

Agricultural tribes.

256. The land is thus distributed amongst

the agricultural classes:—

Mahomedan Gújars	..	...	44 per cent.
„ Rájpúts	...	...	10 „
„ Aráiens	...	...	10 „
„ Awáns	...	...	11 „
„ Dogars	...	...	10 „
Hindus	...	...	4 „
Others	...	...	11 „

Total

100

Gújars predominate as proprietors. The Aráiens are very common as tenants, besides cultivating a large proportion as proprietors. The Awáns and Aráiens are as a rule well-to-do; and so are the Gújars in the villages away from the river and near the City.

257. The tract is for the most part in fairly good condition.

Condition of the tract.

The villages on the margin of the River, which belong mostly to Gújars, have lost a great deal of land; and the proprietors have become involved on this account. But there are a number of first rate villages removed from the River with a great deal of irrigated land, belonging to all classes of proprietors. The people of these derive great benefit from the proximity of Ludhiána, where they have a ready market for their produce of all sorts, and whence they can obtain a plentiful supply of manure. The Regular Settlement gave a small reduction on the summary assessment. The revenue has been realized without any difficulty, except in one or two of the Gújar villages along the River, which have suffered most from its action. The returns show three and a half per cent. of the total area (or five and a half of the cultivated area) sold since Settlement, and four and a half (or seven) held in mortgage now. The prices per acre are Rs. 27 for sale and Rs. 29 for mortgage, the price per rupee of Govern-

ment demand being much the same as in Bét I. Of the land sold two-thirds has gone to agriculturists, and one-third of the mortgaged land is held by them. Thus the proportion of land transferred to outsiders is four and a half of the total, or six per cent. of the cultivated area.

258. The cultivated area is $5\frac{1}{2}$ per cent. less than it was at

Increase of resources.

Regular Settlement; but, on account of land lost by diluvion, the assessment has been reduced nearly 8 per cent. If we were to leave the villages along the River out of account, we should have a small increase of cultivation since the last Settlement. Irrigation has increased by 26 per cent.; and, as in Bét I, masonry wells have replaced the old unlined ones. Population has slightly decreased since 1868, and is now 12 per cent. in excess of that of 1854. The density is much less than in Bét I (456 as against 588). Plough-cattle are shown as having increased by 15; and the number of ploughs, by 50 per cent. Our enumeration of ploughs, which gives eight acres cultivated to one plough, is probably correct. There is a decrease shown in "other" cattle; but this is improbable.

259. The revenue rates of the Regular Settlement were:—

Rates of Regular Settlement.

Soil.						Rate.		
						R.	As.	P.
Irrigated	...	...	...	...	...	2	5	7
Dofasli	...	...	...	...	...	2	15	5
Ekfasli	...	...	...	...	...	1	4	6
Jadid	...	...	...	...	...	0	4	10
Qadim	...	...	...	...	...	0	3	9

The reason for the high *dofasli* rate is that the produce of this class of land was much over-estimated. The resulting rate jama was very high, and only 80 per cent. of it was actually taken. Soil rates were used for distribution in 12 villages, thus:—

Soil.				Area.	Rate.		
					Rs.	As.	P.
Irrigated	...	...	...	1,044	1	6	7
Dofasli ...	...	...	...	344	1	13	4
Ekfasli ...	...	...	...	5,462	1	1	6

These villages are mostly near to Ludhiána, and superior ones ; but the large village of Núrpur is included, for which the figures are :—

Soil.				Area.	Rate.		
Irrigated...	473	Rs. 1	As. 10	P. 8
Ekfasli	1,317	0	13	0

The area under tenants-at-will paying cash rents is altogether 1,584, or 6 per cent. of the cultivation, as against 3,624 or 14 per cent. under tenants paying in kind. Only 900 acres, or $3\frac{1}{2}$ per cent. of the cultivation, pay competition cash rents. The results from the returns are :—

Paying.	Irrigated.		Dofasli.		Ekfasli.	
	Area.	Rent.	Area.	Rent.	Area.	Rent.
At a rate on the bigah ...	11	34 3-1-5	6	12 2-0-0	163	258 1-9-4
Lump sums ...	21	170 8-1-6	49	148 3-0-4	538	1,181 2-3-1

The last item, as having the largest area, may be taken as most reliable. But the whole area of the return is not large enough to justify any conclusion, and the cultivation by tenants is in no way to be compared to that by proprietors. The custom of the whole Bét is to take rents in kind, and it is only when he cannot let his land in this way that a proprietor takes a cash rent.

Revenue rates sanctioned. 260. The rates sanctioned and the resulting assessments are as follows :—

Soil.				Area.	Rate.	Resulting assessment.	Half-asset Estimate.
Irrigated	2,454	Rs. As. P. 3 12 0	9,202	11,036
Dofasli	1,458	1 10 0	2,369	2,994
Ekfasli	22,209	1 4 0	27,761	29,428
Total	39,332	43,458

When I came to distribute the assessment given by the rates over the villages of this Circle I found that, even after making allowance for the new alluvial lands, the rates gave higher jamas than I could take; and those finally reported amounted to 35,535, as against a rate jama of 36,738, which was still an actual increase of 23 per cent. on the last year's demand of 28,288.

LOWER DHAIA CIRCLE.

261. The Lower Dháia Circle of Ludhiána is a continuation of that of Samrála, and a detailed description of it is not necessary. It extends for the whole breadth of the Tahsíl, and contains 78 villages with a total area of 73,604 acres, of which 79 per cent. is cultivation. The Dháia portion is much better than that of Samrála, because several fine villages have been included, and the percentage of irrigation and good soils is as follows:—

Irrigated	...	...	71½
Rouslí	...	...	62½
Bhúr	...	...	30
Total cultivation ...			100

The crops and husbandry of the Dháia portion are the same as in Samrála, while in the Bét lands they agree with those described for the *Packa* Bét Circles of Ludhiána. The land is divided thus between the various agricultural tribes:—

Mahomedan Rájputs	...	...	30 per cent.
„ Gújars	...	...	9 „
„ Aráiens	...	...	4 „
„ Jats	...	...	3 „
„ Awáns	...	...	6 „
„ Others	...	...	6 „
Total Mahomedans	...	...	58 „
Hindu Jats ...	...	...	35 „
Other classes	...	...	7 „

100

The Mahomedans hold the villages along the High bank, those with land in Bét and Dháia; and the Hindus, those adjoining the Upper Dháia.

262. Some of the large villages along the High bank belonging to Rájputs are in very bad condition (such as Kum, Dhanánsu, Bírmi). The lands of these (both Bét and the Dháia) are not very good, and the cultivation poor; but the assessment is extremely light, and it is entirely owing to the thriftless habits of the proprietors that they are in such a state. The Hindu Jat, Awán and Aráien villages are all well conditioned, and there is little complaint of debt in most of them. But the tract does not enjoy many natural advantages; and is, as a whole, the worst off in the Tahsíl. The present assessment was a considerable increase on

that of the Summary Settlement; but it is realized without trouble, except in one or two villages where the lambardárs are themselves in difficulties. On the whole, though some of the Dháia lands are very inferior, the condition of the Circle is not really bad.

Of the total area three per cent. has been sold since the Regular Settlement, but three-fourths of this has gone to agriculturists; while seven and a half per cent. is now held in mortgage, half of it by the money-lending classes. The prices realized are by Appendix V (a and b) Rs. 45 an acre on sale, and Rs. 28 on mortgage; and by Appendix Ve. (Registration returns) Rs. 40 and Rs. 28. The land sold and mortgaged is mostly in the Dháia. In the returns are included two whole villages (one sold and one mortgaged); and this has run up the area. There is a good deal of book debt; and the Rájput and Gújar villages more especially owe large sums. Land has clearly a very good price.

Changes in resources
cultivation and irrigation.

263. In the Bét portion of the Circle there has been a large increase in irrigation, and a considerable one in total cultivation, thus :—

	Irrigated.	Unirrigated.	TOTAL.
Former	652	8,787	9,439
Present	1,439	9,205	10,644
	+120 p. c.	+5 p. c.	+12 p. c.

There is the same improvement in irrigation as in the Bét Circles, masonry wells taking the place of unlined ones. In the Dháia portion irrigation has decreased owing to a few wells having fallen out of use. The details are :—

	Irrigated.	Unirrigated.	TOTAL.
Former... ..	3,874	43,440	47,314
Present... ..	3,613	44,442	48,055
	—6 p. c.	+2½ p. c.	+2 p. c.

There is the same complaint here as in Samrála, that the sand is spreading; and the loss of wells in several villages would appear to support this. Our returns of soil show a larger proportion of *bhár* than at the Regular Settlement; but this probably means that we have adopted a standard more favourable to the cultivators. At best

the Dháia portion can only be said to be stationary, and there has been a decided decrease in irrigation of about 6 per cent. The other details are for the Circle as a whole, and show that plough-cattle have increased by 11, and ploughs by 22 per cent. The increase in population from 1854 to 1868 was 22 per cent., and only 3 per cent. between 1868 and 1881. The density is not great (399 per square mile of cultivation), and is less than in any other circle except the Jangal.

264 The rates sanctioned, and the resulting assessments are shown in the following statement. I was directed Rates adopted. in the orders sanctioning the rates to go above them and to take up to a 10 per cent. enhancement if it appeared prudent to do so :—

	Soil.	Area.	Rate.	Resulting Jama.	Half-asset Estimate.
			Rs. As. P.		
Bét.	Irrigated	1,439	3 12 0	5,396	6,874
	Dofasli	2,675	2 4 0	6,018	7,075
	Eklasli	6,530	1 4 0	8,162	7,894
Dháia.	Níái cháhi	2,444	3 8 0	8,554	11,256
	Khális cháhi	1,169	2 8 0	2,922	3,380
	Rousli	29,933	1 2 0	33,674	30,454
	Bhúr	14,509	0 12 0	10,882	9,612
	Total ... ..	...	1 4 1	75,608	76,545

I may say here that, when I came to assess the villages in detail, I found it necessary to make some transfers from one to the other of this and the following Circles; and my doing so will account for differences in the jama by rates as shown in the Assessment Reports and in those of the detailed village assessments (Statement E), which latter I also give in all cases. I had no difficulty in taking a total assessment of 80,100 as against an assessment by rates of 79,341, which is an enhancement of 10 per cent. on the last year's jama of 71,404.

UPPER DHAIA CIRCLE.

265. The Upper Dháia Circle contains 117 villages with a total area of 108,145 acres, of which 95,135 or 88 per cent. are cultivated. It is the central General description. portion of the Tahsíl, stretching right across it. The greatest length from east to west is 22 miles, and the breadth varies from 2 to 12. The tract does not differ much in character from the

Samrála Upper Dháia. The soil is generally somewhat lighter, and the surface cut up more irregularly by sand ridges; but stretches of as good loam as any in Samrála occur, and the proportion of actually inferior soil is not quite so great. The water level lies at about the same depth (40 feet), and irrigation is quite as easy. The proportion of irrigation is less here than in Samrála (22 as against 42 per cent.); and there is not so much high cultivation. But the unirrigated lands at all events are equal to those of Samrála, perhaps even better adapted to *baráni* cultivation. The proportion of irrigation, *rouslí* and *bhúr* are—

Irrigated ...	...	...	... 22 per cent.
Rouslí ...	...	...	... 63 „
Bhúr ...	...	...	... 17 „

No detailed account need be given of the crops and husbandry of the tract, as the description of the Samrála Circle applies to this.

Agricultural tribes, and tenures. 266. The proportions of land held by the various agricultural tribes are—

Hindu Jats ...	...	...	... 86 per cent.
Other Hindus ...	...	...	... 3 „
Mahomedan Jats ...	...	...	... 3 „
Others ...	...	...	... 3 „

Total ... 100

Of the Hindu Jats the Garewál *got* hold 26 per cent. of the whole area of the Circle, the rest being divided between the Gil, Sekhon, Dhilon and other *gots*. The Garewáls are probably not much inferior as cultivators to the others, but more given to extravagance. Most of the land of the Circle therefore belongs to the best class of agriculturists. The cultivating tenures are :—

By proprietors cultivating their own land ...	...	...	... 76
By occupancy tenants ...	...	...	... 4
By tenants-at-will ...	...	...	... 20

Total ... 100

The land under tenants-at-will is thus made up :—

By mortgagors cultivating their own land ...	...	...	... 2½
By proprietors of other land ...	...	...	... 9½
By tenants who have no proprietary or occupancy rights	...	...	8

267. Of the total area two per cent. has been sold to agriculturists since the Regular Settlement, most of it (five-eighths) within the village; and only one half per cent. to money-lenders. The proportion of area mortgaged is four per cent. to money-lenders; and of this about one-third is without possession of the mortgagee. The total transfers amount to two and a half per cent. sold since Regular Settlement, and eight per cent. now in mortgage.

In such a large Circle it might be expected that the condition of all villages would not be alike. Some are weak, either on account of

inferior soil, or because the people have got into debt in bad years and have not been able to extricate themselves. One or two villages were disorganized in the Summary Settlement, and had their land transferred. But the tenacity with which it has been held by the purchasers, and the constant attempts of the original owners to recover it, show how much it is valued. The great majority of the villages are strong communities, perfectly self-dependent. The proprietors seldom owe more money than they could pay off with a slight effort; and they are able to dispose of their surplus produce themselves in Ludhiána, and watch the market quite as keenly as the ordinary trader does. The dwellings present generally an appearance of prosperity; and there is more display of it than in Samrála. Good houses, good cattle, brass dishes, jewelry are the signs of wealth to be looked for; and they are generally to be found. Most houses have a store of grain, the produce of one harvest being kept till the next one is secure, unless very high prices tempt it out. Large sums of money are spent on marriages and funerals; extravagance of this sort being greatly on the increase. Altogether I think there are unmistakable signs that the tract has thriven under the former assessment, which gave a slight reduction in the villages that had been summarily assessed, and has been collected without any trouble at all.

268. Notwithstanding that a considerable area has been taken up for public purposes (Canal and roads) there is an increase in resources : is an increase in cultivation of about 6 per cent. The irrigated area has not been extended; but there is an increase of $3\frac{1}{2}$ per cent. in the number of wells. A comparison of the area irrigated per well gives for this and the corresponding Circle of Samrála :—

Tahsíl.	Area per well of one bucket.	
	Níái.	Khális.
Ludhiána 	11	13
Samrála 	12	16

The average area of crops irrigated annually is about the same in both Tahsils. There has been a great improvement in the quality of the irrigated cultivation, the returns showing the area of irrigated crops as 24 per cent., and that of sugarcane 12 per cent. in excess of what it was before. The increase in the actual productive power of the Circle has not then been very great; but it is quite as much as we should have expected from the small margin left at the Regular Settlement for the extension of cultivation. It is in the value of the produce, and consequently in the profits of cultivation, that

there has been a marked improvement. On the other hand population increased 30 per cent. between 1854 and 1881.

269. It would take up too much space if I were to repeat here for each Circle the data on which our revenue rates have been founded. They are of the same character as those given in the preceding paragraphs, and will be found in the printed Assessment Reports. My object in detailing them in full for the first few Circles is to give an idea of their nature; but in those remaining I will not go into such particulars. The following statement gives the rates finally adopted for this Circle and their results:—

Soil.	Area.	Rate.			Resulting Jama.	Half-asset Estimate.
		Rs.	As.	P.		
Nái cháhí ...	12,437	4	8	0	56,166	65,715
Khális cháhí ...	8,170	3	4	0	26,952	30,442
Dákhar and Rouslí ...	60,196	1	6	0	82,770	95,158
Bhúir ...	14,332	0	14	0	12,541	12,469
Total ...	.....	.....	.....	.....	1,78,429	2,00,784

The assessments announced and reported in Form E amounted to Rs. 1,70,639, the result of the rates, after such alteration in the limits of the Circle as it was necessary to make, being Rs. 1,71,212, and the increase 17 per cent. on the previous demand.

THE PAWADH CIRCLE.

270. Circle Pawádh contains 39 villages with a total area of 34,972 acres, of which 27,332 or 78 per cent. are cultivated, and 5,867 or 16 culturable or recently abandoned. It embraces the upper part of pargana Maloud; and is held in jágír by the Sardárs of Maloud, with the exception of three or four villages. There are two outlying villages attached to the Circle. The Pawádh does not materially differ from Upper Dháia, except that the soil is generally harder, containing more clay, and better adapted to irrigated than to unirrigated cultivation. There are one or two sand drifts, and lighter soil in their neighbourhood; but a stiff loam of dark colour predominates. The water level is closer to the surface, being generally at a depth of about 30 feet. Irrigation from wells covers 29 per cent. of the cultivation. The average population per square mile of cultivation (630) is much higher than in any other Circle of the Tahsil; and only a little lower than that in Upper Dháia Samrála.

271. The cultivation is on the same system as in Upper Dháia, Ludhiáná and Samrála, so I need not describe it in detail. The proportions of crops grown in a year on the *nái* and simple well lands are as follows for every 100 acres of cultivation:—

	Nái (five-sixths.)	Kháls (one-sixth.)
Area of crops grown	138	110
Of which sugar	14	8
Cotton	15	10

The irrigated cultivation is probably as a whole superior to that of any other part of the District—a result that is due chiefly to the industry of the cultivators. The soil repays to the full the labour, manure and irrigation which it receives ; and (the principal advantage) the water level is nearer to the surface than anywhere else in the Uplands, and consequently the labour of irrigation is less.

The unirrigated cultivation is almost entirely on the *dofasli dosála* system. Owing to the nature of the soil much greater labour is required to produce a good tilth than in Upper Dháia, and the want of rain is much more severely felt. When the rainfall is copious, very good crops are grown, the yield being probably better than in lighter soils ; but, if the fall is at all scanty, the crop dries up. The large percentage of gram and *charri* sown alone is a proof of a hard soil ; for in lighter lands mixtures are always grown.

272. Of the total area 94 per cent. belongs to Hindu Agricultural tribes. Jats of the Bhandar and miscellaneous *gots*. They are a most industrious and thrifty race ; and no other tract can show such a large proportion of good cultivators. Even amongst Jats the people of the Pawádh are noted for their industry.

The land is thus cultivated :—

By proprietors	82
By occupancy tenants	2
By tenants-at-will	16

273. The returns show that of the whole area one and a half per cent. has been sold since the Regular Settlement and seven per cent. is now held in mortgage. Sales and mortgages. About one half of the sales have been to other members of the village community, and only a third to non-agriculturists. About one-quarter of the mortgages are without possession of the mortgagee,

while the whole of these and about half the mortgages with possession are to money-lenders. Thus :—

	To agriculturists.	To non-agriculturists.	Total.
Percentage sold	1	$\frac{1}{2}$	$1\frac{1}{2}$
Mortgaged with possession ...	$2\frac{1}{2}$	$2\frac{1}{2}$	5
Mortgaged without possession ...	.....	2	2
Total ...	$3\frac{1}{2}$	5	$8\frac{1}{2}$

The people have by their thrift and industry attained a condition of great prosperity; and the villages are almost without exception held by strong independent communities. In fact I do not know any one village that can be said to be badly off; while some are notorious as containing great wealth. The proprietors dispose of their produce either to traders on the spot, or take it to Ludhiána, and there is not much debt of any sort. The villages were not assessed in the Summary Settlement, but paragraph 10 of Mr. Barnes' Review gives the following details for the whole jágir, that is this and the Jangal Circle—

Jágirdars' estimate of their collections ... 1,15,938

Regular Settlement assessment ... 74,950

The jágirdar's took in grain and in cash; and their estimate was naturally exaggerated, though not very much; and there is no doubt that they took the equivalent of nearly half as much again as the Regular Settlement assessment. The rates at which they made their collections were little if anything under proprietors' rates; and the Regular Settlement assessment gave a reduction of nearly two-fifths on these.

274. Cultivation has increased 16 per cent., and irrigation 21 per cent.; but the number of wells only by 6 per cent. The present return of irrigated area gives per well :—

Class.	One bucket.	Two buckets.
Níái	12	18
Khális	14	21

These are nearly the same averages as in Upper Dháia Samrála, and our present returns may, therefore, be taken as correct. Plough-cattle has increased by 53 per cent., and the number of other cattle

is shown as somewhat less than before, a result perhaps due to the breaking up of waste. On the other hand, population has increased by 28 per cent., and the present density is 630 the square mile of cultivation.

Rates sanctioned.

275. The following is a statement of the sanctioned rates, and the results.

Soil.	Area.	Rate.	Resulting Assessment.	Half-Asst. Estimate.
Niāi chāhi	6,619	4-2-0	27,427	28,879
Khālis chāhi	1,341	3-0-0	4,023	4,145
Rousli and Dākhar	16,228	1-4-0	20,285	21,776
Bhur	3,114	0-13-0	2,530	2,577
Total ... ..	.....	.....	54,265	57,377

The assessments actually announced amounted to 54,360, an enhancement of 22 per cent.

TIHÁRA CIRCLE.

276. The Tihára Circle contains 57 villages with a total area of 66,112 acres, of which 59,167 or 90 per cent.

General description.

are cultivated. It is the south-west corner of the upper part of the Tahsil, and comprises the whole of pargana Pakhowál, and some villages of Ghungrána. Two outlying villages are included, as belonging to this rather than to the Jangal Circle. The natural features of the Circle do not differ very much from those of Upper Dhāia. The soil is somewhat lighter, and although the water level is nearer to the surface (about 35 feet generally), irrigation is not so common, only 15 per cent. of the cultivation being irrigated. Of the unirrigated area 78 per cent. is good soil (that is *dākhar* or *rousli*); and 22 per cent., *bhur* or sand. We have no proper record of the rainfall; but it may be taken as two or three inches less than that of the last two Circles. The present density of the population is 493 to the square mile of cultivation.

277. No sugar is grown save in one or two villages. The irrigated crops are cotton or maize in the Kharif,

Irrigated cultivation

and wheat or barley in the Rabi. The cotton and maize receive the attention that is devoted to sugarcane in the other Circles, and are very superior. The yield of maize in particular is in some villages better than in any other part of the Tahsil. The well cultivation is not so laborious as in the other Circles.

The unirrigated crops are *barra* in the Rabi (that is wheat or barley mixed with gram, and *sarson* sown at intervals): and *moth*, *charri*, or a mixture of

Unirrigated.

them in the Kharif; and the soil is generally very well adapted to the

cultivation of these. Some land yields a Rabi crop every year, but most of the unirrigated cultivation is on the *dofasti dosála* system.

Tenures and agricultural tribes.

278. The land of the Circle is cultivated—

By proprietors	...	...	84 per cent
„ tenants with occupaney rights	...	...	2 „
„ tenants-at-will	...	...	14 „
Total	...	...	100

Hindu Jats own 78 per cent. of the whole; and there are one or two Rájput villages, this tribe having 9 per cent. of the whole land. The principal *gots* of Hindu Jats are Garewál (13 per cent.), Dháliwál (10 per cent.), Bhandher (4 per cent.). The Rájputs of the Circle are perhaps worse than their class generally, more thriftless and poorer cultivators.

279. Most of the villages are in very good condition, being in the hands of large and strong communities. Condition of the Circle. The Rájputs are in debt; but the Jats are well to-do, and, as a rule, independent of the money-lender. A succession of good harvests, and the high prices now realized for the inferior grains grown in unirrigated land, have brought a great deal of wealth into the Circle; and in every village some of the proprietors are engaged in trade, and own carts or camels which they ply for hire. Numbers too are in service all over the country. The houses are well built and comfortable, and generally contain good stores of grain and cash. It was not found necessary to give much reduction of assessment in the Regular Settlement (about 3 per cent.); and the present jama has been collected without any difficulty.

Of the total area three quarters per cent. is shown in Appendix Va as sold since Regular Settlement, and of this most has gone to agriculturists. The Registration returns, which are up to date, give a much larger area, amounting to one and a half per cent. of the whole. The area now held in mortgage is four and a half per cent. with possession of mortgagee, and one per cent. without possession. Of the former about one-third is to outsiders and two-thirds to agriculturists. The price of land sold is by Va Rs. 72, and by Vc Rs. 36 an acre; while the averages for the mortgages with possession are Rs. 37 and Rs. 32. For sale the price per rupee of Government revenue is Rs. 50, and for mortgage Rs. 26. Appendix Va gives the price realized for land in this Circle as higher than in any other, and there can be no doubt that this is the sort of land that has most attractions to an investor.

280. There has been an increase in cultivation of 8 per cent.

Increase in resources. The irrigated area has remained almost as it was before; but the area of irrigated crops has increased by 30 per cent., showing, if the former crop returns are correct, that the irrigated cultivation has improved greatly in character. There has been an increase in plough-cattle of 24 per

cent., while the number of other cattle is returned the same as before. Population has increased between 1854 and 1881 by 37 per cent.; and the present density is 493 to the square mile of cultivation. The increase in the productive power of the Circle has not been very marked, for there was not room for a great extension of cultivation; and it is principally on the rise in prices that we must found an enhancement of the revenue. This rise has been relatively greater in the inferior rain crops, which are grown so largely in this Circle.

281. The following is a statement of the revenue rates sanctioned for this Circle, with the results on the figures of the Report:—

Soil.			Area.	Rate.	Resulting assessment.	Half Asset Estimate.
				Rs. As. P.		
Níaf chahí...	...	...	5,917	4 0 0	23,788	29,602
Khális chahi	...	...	3,310	2 12 0	9,102	10,137
Rousli	...	...	39,117	1 4 0	8,4854	48,745
Bbúr	...	...	11,243	0 12 0	7,807	8,790
Total	...	...	...	...	89,553	97,274

The assessments announced amounted to 95,998, the jama by rates being, after the transfer of two or three villages from Upper Dhaia, 96,073, and the enhancement 20 per cent.

THE JANGAL CIRCLE.

282. The Jangal Circle contains 29 villages with a total area of 69,026 acres, of which 59,208 or 85 per cent. are cultivated, and 7,479 or 11 per cent. culturable. The villages are all held in jágir by the Maloud family, and lie to the south of the Jagráon Tahsíl in detached groups, surrounded by Nábhá and Patiála territory. The distance from Kháli, the most northern village, to Bhaini Chuhar, the most southern, is nearly 40 miles. The latter is more than half way from the boundary of

Jagrāon Tahsil to that of the Sirsa District. The principal groups are those of Sahna and Dhapáli, which are adjacent and between them contain 21 villages. Sahna may be taken as the centre of the tract, and it is 24 miles from the nearest point of Tihára Circle. The villages are very large, averaging 2,300 acre of total area, and the sites are at great distances from each other. This with the uneven character of the surface and the absence of irrigation, gives the country rather a wild appearance, although there is really little more waste land than in any part of the District. In places great ridges of sand occur, but they are not common; and the soil is generally a good

loam, sometimes with a considerable mixture of clay. The returns give the proportion of *bhur* or sand to good soil as 13: 87. There is a little irrigation in the first two villages of the Circle; and there was some formerly in a village of the Sahna group, but the latter has been given up as unprofitable. Water is found at a depth of 75 to 130 feet; and is with considerable difficulty raised in the wells round the village sites which are used for drinking purposes. The Sirhind Canal, already under construction as far as Sahna, passes through three villages of the Sahna group; and it is probable that every village in the Circle will within a few years be reached by some of the distributaries.

283. The following is a statement of the Crops and husbandry crops grown in the circle:—

RABI TOTAL		55	KHARÍF TOTAL		45
Barley	...	5	Joár and Bájra	...	17
Gram	...	8	Moth, &c	...	3·5
Wheat and gram	...	4	Moth with Joár	...	21
Barley and gram	...	32	Charri	...	2·5
Others	...	6	Others	...	1·

The cultivation is mostly on the *dofasli dosála* system; but the area under the Rabi crops is somewhat greater than that under the Kharíf. The principal crops, it will be seen, are in the Rabi *berra*, which is here a mixture of barley and gram sown together, with *sarson* separately in lines at regular intervals. The barley and gram are cut together some weeks after the *sarson*, and the grains remain mixed. In the Kharíf *joár* or *bájra* or *moth*, &c., are grown separately, or a mixture of them is sown. Where the crops are mixed the heads of *joár* or *bájra* are usually plucked before the crop is cut, and the grains are kept separate. The labour of cultivation is slight, and very few ploughings are required: while, once the seed has been sown, there is nothing more to

be done but to wait for its ripening. The Kharif crop is less liable to failure than the Rabi. With good autumn rains the former is secured, and sowing for the Rabi is possible; but if there is a failure of rain at the end of the autumn, the yield of the Kharif will be poor, and sowing for the Rabi at the proper time impossible. The people will go on waiting in the hope of rain; and, if there is no fall till after the season for sowing the *berra* has passed, a late crop of barley (called "kanouja") is taken, the yield of which could never be more than about one third or half of a proper crop of *berra*. Much moisture is not required for the Rabi sowings, as the soil is very retentive; and even with a short fall there will be a good yield in most land. With favourable rain at sowing time, and afterwards in the winter and spring, magnificent crops are grown.

These conditions are the same as for unirrigated land in other tracts, but here the whole harvest is at the mercy of the seasons. I have given in paragraph 12 reasons for supposing that the average rainfall at Sahua is about 18 inches per annum, while in the more remote villages it is less. There have been few really bad seasons during the currency of the assessment.

Tenures and agricultural tribes. 284. Of the cultivated area only 8 per cent is held by tenants, who mostly pay in kind.

The land is thus owned by the various tribes:—

Hindu Jats	...	...	...	86
Other Hindus	...	...	...	9
Other tribes	...	...	...	5

Total ... 100

The people of the Jangal villages are a very fine race. They have little labour to do in the fields, and spend their spare time profitably in moving about and picking up what they can by trade. A great many of them take service in the army (see paragraph 49).

Condition of the tract. 285. No part of the district has such a reputation for prosperity as this Circle. The people of the more highly cultivated parts are never weary of telling one what immense profits the Jangal zamindars are making, and what an abundance of land there is; and there can be no doubt that a succession of good seasons, and the great demand for the inferior grains, which are the principal staples, together with the trading habits of the people, have raised the general condition of this tract within the last ten or fifteen years much more comparatively than that of any other. There is every sign of prosperity in the Circle. The houses are large and comfortable, the cattle superior to those of any other parts: and a large proportion of the proprietors own carts or camels with which they go all over the country, disposing of their own grain or carrying for hire. It is for this purpose that such high class cattle are kept, for inferior ones would do for agriculture. Perhaps the way in which money is now spent on marriage and other celebrations is

the best proof of the profits made by cultivation. It is not uncommon for a Jat to expend Rs. 500 to Rs. 1,000 on such an occasion, and I have come across cases where Rs. 1,500 had been wasted in this manner by proprietors of ordinary means. Of course this is extravagance, and often means debt; but still it betokens the presence of wealth.

The area returned as sold since the Regular Settlement is very small (about one-third per cent). The area mortgaged is ten per cent. of the whole area; but of this six per cent. is to agriculturists of the village, and two and a half to non-agriculturists; while eight and a half per cent. is mortgaged with possession of the mortgagee; and one and a half per cent. without possession. The latter is all to money-lenders. I have elsewhere remarked that land was often mortgaged where there was no necessity, and this is the state of a greater part of the mortgages in this Circle, to fellow-sharers of the village. The mortgage is sometimes merely a form of tenure, the proprietor being unwilling or unable to cultivate himself, and the mortgagee paying down a lump sum for the right of cultivation, which he retains till the money is repaid. The price of the land sold averages Rs. 38 an acre, or Rs. 79 per rupee of Government revenue; but the area is small. The average per acre of mortgage money is Rs. 30, or 60 per rupee of Government demand. These prices are comparatively (with the revenue demand) higher than in any other Circle, and absolutely higher than in most.

The people have been able to tide over any failures of harvest that have occurred during the currency of the Regular Settlement, and to pay their revenue punctually in the worst years. This they do from their stores of grain; for experience has taught them foresight to an extent that is not required in more favoured tracts, and in the possession of most proprietors will be found sufficient grain for at the very least a year's food. The amount stored at any time will depend on the state of the market, for the people can always wait for favourable prices; but I do not think that it is ever reduced below this until the next harvest is insured; which may be before it is cut. The failure of a single harvest, though it cripples the resources of the tract, is not likely to produce any permanent effect, and good ones following soon restore them. The failure of two harvests, that is a Kharif and Rabi in succession, would be more severely felt. The first effect would be a great loss of cattle, many either dying or being sold for next to nothing; and this is what actually happened in the droughts of 1862 and 1868. Besides suffering a great loss of cattle, many of the people would have after a time to incur debt for their own living. Since 1868 there has been a succession of good seasons, very few having been below the average; and this with high prices has not only removed the traces of the previous bad years; but has raised the Circle to its present state of prosperity.

286. There has been an increase in cultivation of 18 per cent.

Some irrigation has been given up since the Regular Settlement; but the whole area is trifling. Population increased by 41 per cent. between 1854 and

Increase in resources.

1881; and the present density is 318 to the square mile of cultivation, that is half as great as in Circle Pawádh. There has thus been a material increase in the resources of the Circle. The advantages derived from the improvement of communications are greater than in any other tract, and the consequent rise in prices is more marked; and, although great caution is necessary in the assessment of a tract like this, where cultivation is entirely unprotected by irrigation, it is clear that a considerable enhancement might be taken.

287. The rates sanctioned and their results are as follows :—

Soil.	Area.	Rate.	Resulting Assessment.	Half Assets Estimate.
		Rs. as. p.		
Irrigated	91	1 6 0	125	401
Rouslí	52,314	0 11 0	35,966	47,705
Bhúr	6,803	0 8 0	3,401	4,159
Total ... ..	.....	.....	39,492	52,565

These sanctioned rates gave an increase of about 39 per cent.; but the actual enhancement was to be restricted to 33 per cent on the former jama, and the assessments actually announced, which amounted to 38,265, gave this proportion

TAHSIL JAGRAON, BET CIRCLE.

288. The Bét Circle of Jagráon contains 18 villages with a total area of 15,998 acres, of which 9,924 acres or 62 per cent. are cultivated; 4,239 or 26

per cent. barren waste; and the remaining 12 per cent. culturable or recently thrown out of cultivation. To the east for about six miles the River runs at some distance from the High bank; and between them lies a tract three or four miles wide, similar to the Ludbiána Bét, having some land annually inundated, and the rest beyond the direct action of the River (*kacha* or *mand* and *packa*). We have here been able to include villages with only Bét land in this Circle, and to throw those with Bet and Dháia lands into the Lower Dháia Circle: but from Bhundri westward the Dháia and River are only about a mile apart, and the floods reach almost right up to the former, while the villages are large, and their lands stretch from the River several miles south of the High bank. There are none of these entirely in the Bét, and we have here thrown a few into the Circle, although they have Dháia lands also, in order that the whole tract may be represented in our returns. In the western villages there is very little *packa* Bét land.

The Budha nála runs through the eastern part of the Circle, and joins the River a mile to the west of Bhundri.

Budha nála.

Its banks are high, and it does no harm to the land, which is cultivated right up to them.

The soil of the *mand* or inundated land is a stiff moist loam of varying depth on a substratum of sand. It is generally of great fertility, and is covered with a fresh deposit of silt every year, so that two crops (*másh* or rice followed by *masar* or wheat) can be grown in the year without the aid of manure. Sometimes good land goes by diluvion or is covered with sand and left barren; but as a rule the action of the River is beneficial. There is little *packa* land west of Bhundri, and the *Satlej* appears to be getting nearer to the High bank, cutting down the old land and throwing up new *mand* on its site. To the east there is a good deal of *packa* land between the Budha nála and the High bank: and the soil of this is generally very stiff and hard. In places there is enough moisture to permit of two crops being grown in the year with the aid of manure; but such land is not very common. Of the cultivated area nearly 4 per cent. is irrigated from wells which lie just under the High bank, or (in the eastern part) round the village site in the *packa* land. The cultivation at these is very superior, more especially where it is by Araiens. Water is at a depth of 10 or 12 feet from the surface, and can be raised by very ordinary cattle. The average area attached to a Bét well is 8 acres, and 13 or 14 acres of crop are irrigated annually. The account given of the Lower Dháia Circle will apply to the Dháia lands of this, so I need not describe them here.

289. The following statement shows the crops grown in the Circle:—

Crop.	Irrigated.	Unirrigated.	Total.	Crop.	Irrigated.	Unirrigated.	Total.
Wheat	2	24	26	Maize	2	11	13
Barley ... ..	...	3	3	Rice ... ..	...	4	4
Gram ... ..	...	3	3	Másh ... ..	...	5	5
Masar ... ..	...	4	4	Charri ... ..	...	4	4
Wheat and Gram ...	...	29	29	Moth ... ..	...	2	2
Others	1	4	5	Others	1	1	2
Total Rabi	3	67	70	Total Kharif ...	3	27	30

In irrigated land maize in the Kharif is followed by wheat in the Rabi; and every 100 acres of *Chāhi Bét* land gives 180 acres of crop in the year. The maize crop is generally splendid, the land being heavily manured and constantly irrigated, besides being naturally very good. I have known fields to yield at the rate of upwards of 30 maunds of maize corn an acre. The maize is followed by a Rabi crop of wheat or fodder (*senji*, &c), for which no manure is ordinarily used.

In the *mand* or inundated land the Kharif crop is rice (where there is a great deal of moisture), or *másh*. These are followed in some lands by wheat, barley or *masar* in the Rabi, or only one crop (Rabi or Kharif) is grown in the year.

In places there are plots of land which, though removed from the direct influence of the River, are naturally moist from their proximity to some stream or because lying low; and in these two superior crops (maize followed by wheat) are grown in the year with the aid of manure. Where only one crop is grown in the year, it is generally a Rabi of wheat (or of *masar* in poor land), more rarely a Kharif of *charri* or maize. The rice, *másh* and *masar* crops grown in the *mand* are very fair, though at best they are of little value. The rice grown is of a very coarse kind, and sells at about 30 seers for the rupee. The maize crop is good in manured land, and very poor in *mand* or other unmanured land. The *charri* is grown entirely for fodder, and is poor and stunted. The wheat crop is the best of all the unirrigated. The system of cultivation of ordinary land is almost entirely *ekfasli karsála*, either a Rabi or Kharif crop being grown year after year. It is usual to go on growing a Rabi of wheat for three or four years, and then change to a Kharif of *charri* or maize for a year or two.

290. The land is owned by the various tribes in the following proportions:—

Gújar	...	...	..	39	per cent
Rájput	...	...	..	28	"
Aráien	...	...	..	15	"
Other Mahomedans	...	...	..	8	"
Hindu Jats	...	...	..	7	"
Others	...	...	..	3	"
Total				100	

Of the whole cultivation 31 per cent. is by tenants and 69 per cent. by proprietors. The land under tenants is thus divided:—

Held with rights of occupancy.	...	...	7	per cent.
Cultivated by tenants who have rights of occupancy or ownership in other land	...	...	11	"
By tenants who have no such rights	...	...	13	"

291. A large proportion of the land is in the hands of Rájputs and Gújars; and, as in the Bét tracts of the other Tahsils, there is a good deal of debt, incurred principally from want of thrift. But there are a great many well-to-do families in all three tribes (Rájputs, Gújars, Aráiens); and some of the villages are in very good condition. The land just over the High bank is the poorest in the Tahsil, and most of the Dhaia villages have also land exposed to the direct action of the River; and therefore not always to be relied on. Some have suffered a good deal by loss of land, and this is a sure cause of debt; but on the whole I think the Circle may be said to be in fairly good condition. The Patwáris' papers show one and a half per cent. sold since Regular Settlement, and ten per cent. (of the total area) as now held in mortgage with possession of the mortgagee. The proportion mortgaged to money-lenders is small (two per cent. of the whole area). Nearly half of the area shown as mortgaged to agriculturists of other villages is in the village of Bhundri, where a share of a *patti* has been alienated to some Gújars from across the River, who were in want of land.

292. Appendix I shows an increase of 6 per cent. in cultivation, and of 47 per cent. in irrigation; but the whole area irrigated is small, and we cannot draw the same conclusion from an increase of cultivation in a Circle like this as we could in the uplands. What has actually happened is that one village, assessed at Rs. 800, has completely gone, and a new village has been thrown up in the middle of the River. A large proportion of the present cultivation is new land. Old land assessed at full rates has gone by diluvion, and light rates have been put on the new land, and the assessment of the whole Circle has fallen from Rs. 10,960 to Rs. 10,163, although the cultivated area is actually larger than before. The area of crops has nominally increased nearly 10 per cent. There is also an increase in the number of ploughs of 47 per cent., and in plough-cattle of 25 per cent., while the number of other cattle is shown as having decreased. The enumeration of the last is not very reliable; and a falling off would have no significance, as the people do not keep more cattle than are required for cultivation and for dairy purposes, except in one or two Gújar villages.

293. The revenue rates sanctioned for this Circle and the estimated results of their application were as follows :—

Rates sanctioned.

Soil.		Area.	Rate.	Resulting Jama.	Half Assets Estimate.
Bét.	Irrigated ...	287	Rs. As. P. 3 12 0	1,076	1,686
	Dofasli ...	2,263	2 0 0	4,526	5,200
	Ekfasli ...	3,586	1 4 0	4,483	4,170
Dháia.	Cháhi ...	91	3 0 0	273	488
	Rousli ...	259	1 0 0	259	318
	Bhúr ...	3,438	0 10 0	2,119	2,962
	Total ...	...	...	12,766	14,824

As in other Bét Circles the area to which the rates were actually applied differed from that in the Report, and the total of the village assessments reported was Rs. 11,364 (the rate jama being Rs. 11,314), or an increase of 5 per cent.

LOWER DHAIA CIRCLE.

294. The Lower Dháia of Jagráon resembles that of the other

General description. two Tahsils. It consists in the first place of

villages along the High bank, with some good Bét land, irrigated and unirrigated. Some of the villages in the western part run right down to the River and have Bét land, both inundated and beyond the reach of the floods, besides Dháia land. The Circle is about 14 miles from east to west and 8 from north to south. It contains 57 villages with a total area of 71,966 acres or 12 square miles, of which 89 per cent. is cultivation. The village sites are generally just on the ridge, and the soil for two or three miles south of it is very light and poor. The surface is uneven in places, and the sand is shifted about by the strong winds from the south-east. The crops and husbandry are much the same as those described for the corresponding Circles of the other Tahsils.

295. The ownership is thus divided amongst the various agricultural tribes :—

Agricultural tribes and tenures.

Hindu Jats	...	...	70 per cent.
Mahomedan Rájpúts	...	...	5 "
Do. Gújars	...	...	4 "
Do. Aráiens	...	...	11 "
Others	...	...	10 "
Total			100

The Mahomedans hold the villages along the High bank and nearly all the Bét land ; the Jats, those further south. The cultivation is in the following proportion :—

By proprietors	...	...	79 per cent.
Cultivated with rights of occupancy	...	...	8 "
Do. by proprietors or occupancy tenants of other land	...	...	8 "
By tenants with no proprietary or occupancy rights	...	...	5 "

296. The Circle has not many natural advantages, for the soil is mostly poor and incapable of yielding very much: but some of the Jat villages adjoining the Upper Dháia are more favourably situated, and have good (irrigated and unirrigated) as well as poor lands. These are the best villages in the Circle; and in them the people are very well-to-do. In a few the proprietors are able to go in for a little trade; and the village sites present an appearance of prosperity, carts, good cattle, and some elaboration of the dwellings being the principal signs. Some few Jat families have taken to money-lending. The villages adjoining the High Bank are not at all well-off, either Jat or Mahomedan; and complaints are very generally made. On the whole the Circle is not in such good condition as would lead us to expect much enhancement of the present assessment: but, on the other hand, there is nothing to show over assessment, for the demand is admittedly light. It is only of the poverty of the soil that the people complain.

Of the total area of the Circle Appendices Va and b, show one per cent. as sold since Regular Settlement and ten per cent. as now held in mortgage. In both cases only about one third of the land has gone into the hands of money-lenders; and most of the sales have been to members of the village community. The price realized is Rs. 40 an acre, or Rs. 39 per rupee of Government demand; and the amount secured per acre on mortgage with possession, Rs. 29, or Rs. 28 per rupee of the demand. These prices are higher than one should have expected from the nature of the soil.

297. There has been an increase in cultivation of 8 per cent., somewhat greater in the Bét than in the Dháia. Increase of resources. Irrigation has increased in the whole Circle by 38 per cent., a great number of new wells have been sunk in the strip of land just under the High bank, and in the land sloping down from it. The number of wells has increased by 50 per cent., the new ones being mostly in the Bét, where the area attached to a well is less than in the Dháia. The number of ploughs has increased by 58 per cent.; and plough cattle, by 15; the number of other cattle being shown about the same as before: while population increased by 38 per cent. between 1854 and 1868, and has since remained stationary. Except the increase of irrigation, which is mostly in land of the Bét tract, there is not a material improvement in the resources of the Circle, and there has probably been some deterioration of the soil.

298. The revenue rates sanctioned were as follows:—

Soil.		Area.	Rate.	Resulting jama.	Half-as-set estimate.
Bét.	Cháhi ...	1,097	3-12-0	4,114	6,673
	Dofasli ...	2,125	1-10-0	3,453	3,579
	Ekfasi ...	2,157	1-4-0	2,696	2,258
Dháia.	Nál Cháhi ...	2,814	3-8-0	9,849	11,260
	Khalis Cháhi ...	317	2-8-0	868	935
	Rousli ...	10,189	1-2-0	11,463	10,067
	Bhár ...	44,936	0-12-0	33,702	32,157
Total ...		63,665	.....	66,145	66,299

The village assessments actually announced and reported in Form E amounted to Rs. 67,012, or an increase of 7 per cent. on the previous demand, the jama by rates being Rs. 65,146. In the orders sanctioning the rates it had been indicated that, if possible, an enhancement somewhat over rates should be taken.

THE UPPER DHAIA CIRCLE.

299. The Upper Dháia Circle of Jagráon comprises the remaining villages of the Tahsil, 100 in number, with an General description. area of 175,945 acres, or 275 square miles. The Circle varies in width (east to west) from 15 to 20 miles, and is about 18 miles from north to south. The Sirhind canal (not yet opened) runs across the whole width. Of the total area 156,424 acres, or 89 per cent., are cultivated; and 11,364 (6 per cent.), culturable or fallow; the remaining 5 per cent. being barren waste or Government

property. The soil varies a good deal, being in places a stiff loam, requiring a good deal of moisture. Sand drifts occur throughout the Circle, and in their neighbourhood the land is somewhat inferior; but the prevailing soil is a good light loam (*Rousli*) easily worked and very fertile. There are few villages that have not half of their land of this sort; and, even when the rainfall is short, sowing is possible in some of the land. The percentages of good and bad soils are:—*Rousli* and *Dákhar*, 83 per cent.; *Bhúr*, 17. Of the cultivated area 8 per cent. is irrigated from wells. This land

Irrigation.

lies mostly in the eastern and northern villages,

which are generally smaller and more populous. In the south-western villages the holdings are much larger, and irrigation is not required. The water, too, is at a greater depth, being upward of 50 feet from the surface at Hatur, while it is only about 35 in villages adjoining the Lower Dháia.

Crops and husbandry.

300. The following table shows the crops grown in the Circle:—

CROP.	Irrigated.	Unirrigated.	Total.	CROP.	Irrigated.	Unirrigated.	Total.
Wheat	5	...	5	Maize	4	...	4
Barley	1	1	2	Cotton	1	...	1
Gram ... ..	...	3	3	Joár ... ..	...	7	7
Wheat and gram ...	...	35	35	Moth ... ..	...	26	26
Barley and gram ...	...	10	10	Másh ... ..	...	3	3
Others	1	...	...	Charri ... ..	...	2	2
				Others ... ..	...	1	1
Total Rabi	7	49	56	Total Kharif ...	5	39	44

The wells are mostly close to the village site; and the crops grown are maize or cotton in the Kharif, and wheat or barley in the Rabi. In the north-eastern villages of the Circle the well cultivation is very superior. The care that is in Samrála and Ludhiána devoted to the sugarcane crop being here bestowed on the maize, which gets the whole of the village manure. The land is most carefully worked for it before sowing, and receives frequent hoeings till the stalks are well up. Constant waterings are given; and the result is a magnificent crop. The maize is followed by wheat or barley; or in fields for which there is not sufficient manure a single crop, generally a Rabi one, is grown in the year. To the south and west the well cultivation is indifferent, and there is little of it. The holdings are large, and the harvests have been so profitable in

unirrigated land for a number of years now, that the cultivator is much more inclined to use his cattle for carrying either his own grain to a good market or for hire. In one village (Rasulpur) adjoining Ferozepur there are 16 wells round the site, not one of which is now working, although the people are all in good circumstances and have first-rate cattle.

The unirrigated Rabi crop is *berra*, generally wheat and gram, more rarely barley and gram, *sarron* (rape) being sown with it at intervals in lines. In the Kharif, *moth*, *mung*, &c., are principally sown, alone or *jodr* mixed with them. *Berra* is the great crop of the Tahsil. The soil is well suited to it, the yield is very good, and the grain has been in great demand for some years now. The *sarron* does not interfere with the other crop, is cut before it, and gives the cultivator something very considerable over and above his *berra*. The Rabi is mostly followed by a Kharif of *moth*, *jodr*, or a mixture of them; and then the land gets a year's rest. The *jodr* crop in some of the villages with hard soil about the Grand Trunk Road and Canal is very fine, the stalks being seven or eight feet high and the heads very large: and there is generally an under-growth of *moth* &c. The *moth*, *mung* &c., crop when grown alone is very good, the yield of grain not being very great, though better than in other Tahsils; but the straw is very useful for feeding cattle.

301. The land is thus held by the various Agricultural tribes tribes in ownership:—

Hindu jats	...	...	...	72 per cent.
Others Hindus	...	...	...	6 "
Mahomedan Rájputs	...	...	...	8 "
ditto Gújars	...	...	...	6 "
ditto Aráiens	...	...	...	4 "
Others	...	...	...	4 "
Total				100

The principal *gots* of Hindu Jats are the *Sidhus*, *Dhálíwáls* and *Gils*. The "other Hindus" are Khatrís &c., one or two families of the shopkeeping class having acquired proprietary rights here and there before the Regular Settlement. There are also some Hindu Kamíns (Chamárs &c.) who have proprietary rights in a few villages. The Rájputs hold several large villages, or parts of villages (Halwára, Talwandi, &c.) The Gujars and Aráien's hold land about Jagráon, one or two of the *Agwárs* or sub divisions of the land attached to the town belonging to them. There are also two or three small *Hárni* villages, and the Maulvis of Jagráon (paragraph 92) own a good deal of land. Of the whole cultivation 78 per cent. is by proprietors, and 22 per cent. by tenants, made up thus:—

(i.) Cultivated with rights of occupancy	...	...	5
(ii.) Cultivated without such rights, but by tenants who are proprietors or occupancy tenants	}	...	11
(iii.) By tenants without rights in any land		...	6

302. The Hindu Jats of the Circle are as a class very well off.

Condition of the Circle :
Jat villages.

Their villages are all fine large ones, in the hands of strong communities; but the members of these are not all equally well-to-do. Some have thriven and some are in difficulties, and there is a good deal of extravagance, due to the influx of wealth, which often results in debt. The Jat population has fully participated in the profits due to the great rise in price of the inferior grain (principally *berra*); and they have developed more expensive tastes, dressing well, keeping lots of brass dishes, and their women having a great deal of jewelry. The cattle, too, are of a superior class; and most villages have a good many carts and camels that are worked for hire or take the owners grain to Ludhiána. Large sums are spent on marriage and funeral celebrations, and old men say these expenses have increased threefold; while litigation is a luxury that most of the people indulge in, and will often be found to be the cause of debt. The famines of Sambat 1917 (A. D. 1862) and Sambat 1925 (A.D. 1868) have left their traces in debt, which in many cases has never been shaken off; but the Jat population may safely be said to have thriven under our rule; and to be now in a state of considerable prosperity. Where one of them has got into difficulties and has to mortgage his land, a fellow Jat will always be found able and ready to advance the money; and they could get on very well without the assistance of the money-lending classes, and do so in a great measure. Few are unable to dispose of their grain at the market price; and they are generally able to take it direct to Ludhiána and sell it there. Most proprietors retain a stock of grain which would be sufficient for two or three years consumption, and can tide over indifferent harvests without much loss. During the last ten years a great deal of hard cash has found its way into their hands, and few of them would now have to borrow for the payment of revenue in the worst of years.

Mahomedan villages.

The Mahomedan villages are not so well off. Except the Raikot family, which alone holds a large area, the Rájputs are all in difficulties, and that although special allowance was made for them in the Regular Settlement. The Aráiens and Gujars, too, are badly off.

Appendices Va and b show three per cent. of the whole area

Sales and mortgages.

sold since Regular Settlement, and twelve per cent. now held in mortgage, most of it with possession. Of the sales three-fourths are to members of the agricultural community, and two-thirds of the mortgages with possession are to them. Of the area sold nearly one-third is that of manza Morkáríma ("to agriculturists of other villages"), bought at the time of Regular Settlement by the Raikot family. The average price is smaller than in the Lower Dháia, as the large area of the village mentioned above has lowered it. The average mortgage money per acre is (Appendix V b) Rs. 35, or 33 times the Government demand.

303. Cultivation has increased since Regular Settlement 12 per

Increase in resources.

cent., and irrigation 13 per cent.; and the number of wells, by 19 per cent. Ploughs

and plough-cattle have increased by 41 and 29 per cent. respectively. The population has increased steadily since 1854, and is now 33 per cent. in excess of what it then was, the present incidence being 486 to the square mile of cultivation. There has thus been a very material increase in the resources of the tract, which may be said to be in a state of considerable prosperity.

Rates sanctioned.

304. The revenue rates sanctioned for this Circle with the results are as follows :—

SOIL.	Area.	Rate.	Resulting assessment.	Half asset Estimate.
		Rs. As. P.	Rs.	Rs.
Niāi chāhi	8,918	3 12 0	33,555	37,373
Khālis chāhi	3,073	2 8 0	7,682	8,456
Rousli and Dākhar ...	1,19,495	1 3 0	1,41,900	1,52,784
Bhūr	24,908	0 12 0	18,081	20,817
Total			2,01,818	2,19,430

The village assessments announced and reported amounted to Rs. 2,01,415, or an increase of 20 per cent. on the previous demand.

General result for the whole District.

305. In our calculations of assessment we have included all agricultural land, whether liable to assessment or not, as it is a cause of great confusion to treat land as a separate class, merely because it has been exempted from the payment of revenue. Our revenue rates are thus applied to all cultivation; but from the results a deduction must be made on account of māfi or revenue-free land. In Col. 83 of Appendix I has been entered the nominal revenue of such land, so that the Regular Settlement assessment may agree with the area shown in the "Former" Cols. The entries indicated by letters are *khalsa* including *jagir*, *māfi*, *total*, the first of these being the jama actually paid, and the second nominal. In the new assessments I have shown at Cols. 104—106 the details of actual and nominal assessments; and to get a correct idea of the result of our new rates, we must compare the revenue of the last year (Col. 84) with the actual new assessments (Col. 104). The figures are as follows:—

Tahsil.	REVENUE.		
	Of the last year.	New.	Increase with percentage.
Samarā	2,61,871	3,08,586	46,715 18
Ludhiāna	4,30,281	5,11,852	81,571 19
Jagrāon	2,33,525	2,71,477	37,952 16
Total	9,25,677	10,91,915	1,66,238 18

The appointment of zaildars to be paid by a deduction of 1 per cent. from the revenue was sanctioned over the greater part of the District, and minor deductions were also made from the full assessment on account of land under gardens and for crops injured by trees growing along the main roads. Besides this, where the period of 20 years during which land irrigated from new wells are protected from enhancement had not expired, a deduction from the full assessment for the remainder of that period was made. The comparative demand statement (Form G.) shows the actual immediate increase to the Government revenue, and the following is an abstract of it :—

Tahsil.	KHALSA AND COMMUTATION PAID BY JAGIRDARS.		Actual increase.
	Former.	New.	
Samrāla	2,15,564	2,48,943	33,379
Ludhiāna	3,52,556	4,05,789	53,233
Jagráon	2,27,991	2,59,566	31,575
Total	7,96,111	9,11,298	1,18,187

Thus the net actual gain to Government was Rs. 1,18,187 ; and this will be increased by about Rs. 6,000, when the well leases have all expired. The gain to the Jagirdars is Rs. 25,391 immediate and 25,974 after the expiry of the well leases, that is the net gain after deduction of the commutation money payable to Government and included in the statement above.

Cesses. 306. The cesses paid at the Regular Settlement and now are at the following rates per cent. on the revenue :—

Cess.	Regular Settlement.	New.
Local rate ... ..	.....	8-5-4
School ... ..	.....	1-0-0
District post ... ..	.....	0-8-0
Road	1-0-0	1-0-0
Patwári	3-2-0	3-2-0
Lambardār	5-0-0	5-0-0
Total	9-2-0	18-15-4

We have left the cesses as we found them in 1880, except for the addition of the District post cess which had before been omitted.

307. The Samrála assessments have been in operation for two and a half years; and those of the other

General character of the new assessment.

Tahsils for one and a half. It is perhaps too early yet to say how they will stand the test of time; but they were received well. There was not a single case of refusal, and very few remonstrances even. In February and March 1883 petitions were given by some forty villages in the Bet of Ludhiána and by a few in the Dháia; and these were inquired into by the Settlement Commissioner on the spot, and the result reported to the Financial Commissioner. No reductions were considered necessary. My only cause for wonder is that the greater part of the District did not follow this example, for a village has nothing to lose and may gain something by a petition. I think that the people of the Dháia at all events expected a much greater enhancement. The Mahomedan Rajputs and Gujars of the Bet are by nature discontented, and it would not be easy to please them; but I do not think that the addition to the burden of the revenue-payers is likely to press heavily on any part of the District. It is improbable that the prices of agricultural produce will ever fall much below what they are at present; and, when irrigation from the Canal has been fully developed, there will be no part of the district not thoroughly protected against the dangers of drought. Between 20 and 30 per cent. of irrigation is likely to be given to the Tihara, and Jangal Circles of Ludhiána and to the Dháia of the Jagráon Tahsil; and the whole uplands of the District will then have at least 30 per cent. of the cultivation protected.

308. It will be evident from this report, that there is little room for further development of the resources of the

Term of the new Settlement.

land. No waste remains to be brought under the plough, and there is not now apparently much further to be expected from a rise in prices. The term for which Settlements are at present usually sanctioned is thirty years; but I think that there is every reason for an extension of this in the case of the Ludhiána District. I should be inclined to recommend that the new assessments be allowed to run for fifty years, as the circumstances of the District appear to point to this term as suitable, except perhaps for those portions which will come within the influence of the Sirhind canal. The people will always object to a revision, however easy it may be made for them; and I have been asked over and over again to grant leases for a longer period than thirty years, which is, after all, only half a lifetime.

309. English village Note-books, showing the previous fiscal history, the resources, reasons for assessment and

Village Note-books.

other information have been made out according to the directions in the rules under the Land Revenue Act; and it is not necessary that I should describe these in detail. To the Note-book of each village I have attached a form of annual statement exhibiting the agricultural and general condition, changes in the

cultivated area under crops, rents, statistics of transfer of land, &c. I trust that this will be carefully filled in year by year from the vernacular returns. The Patwáris are required to file with the Sadar Kanungo statements in this same form ; and these have merely to be translated. Space has also been left in this annual statement for remarks by District officers, if it should at any time be necessary to make them. If this annual statement be properly kept up the data for revising the assessment of each village when the term of the new Settlement expires will be ready to hand.

CHAPTER IX.—THE RECORD OF RIGHTS AND OTHER MATTERS CONNECTED WITH THE SETTLEMENT.

310. In the two preceding chapters, I have traced the previous fiscal history of the District and given details of the revision of assessment just completed; and I now proceed to describe our operations in connection with the revision of the record of rights, and to give in a form convenient for reference an account of those matters of district revenue administration to which my attention was directed or which were referred by me to superior authority. The operations of the present Settlement commenced at the end of 1878, nominally from the 1st of October. I had been sent a few months earlier with a small establishment for the purpose of instructing the Patwáris, but it was only from the above date that permission to commence work was given. Even then we had not more than a sufficient number of officials for about half the District, and it was not till the end of the year that the staff was fully made up. I do not intend to describe in detail each of the separate operations of the Settlement which was on the model of those concluded about the time that it commenced (Rohtak, Dera Ismail Khán, &c.); and I will only refer to such points as seem to me to deserve special notice.

Two alternative scales of establishment were submitted to Government, one with a grant for Patwáris' assistants, &c., equal to the pay of the Patwáris, and for a supervising establishment to match, and the other with both of these items much reduced. Mr. Lyall as Settlement Commissioner in forwarding the schedules said, referring to the first of these, "with the measuring establishment which I have proposed in the last two paragraphs I feel sure that Mr. Walker will be able to complete the revision of Settlement within four years from 1st October next. If Government is not prepared to sanction such large grants for pay of Munsarims and Patwári assistants, we shall have to club the Patwáris together and have one measuring party to two circles. The revision of Settlement would in fact be likely to take nearly six years instead of four."—(No. 138, dated 4th June 1878, from the Settlement Commissioner to the Settlement Secretary to Financial Commissioner, paragraph 12). The letter of the Panjáb Government forwarding the schedule to the Government of India gave expression to the following views of His Honor the Lieutenant-Governor (Sir R. Egerton): "The Lieutenant-Governor quite agrees in the view of the Financial Commissioner that to admit this expenditure will be the truest economy in the end. The time occupied in completing the Settlement depends greatly upon the duration of the measurements; and it is desirable to bring this stage of the operations to a close at the earliest possible date"—(No. 362C, dated 24 July 1878, from the Officiating Secretary to Government of Panjáb, to the Secretary to the Government of India, paragraph 3). I give these extracts in order to show clearly what my instructions were, and because Government

has in the Settlements recently started adopted the second alternative mentioned by Mr. Lyall; and the views then expressed may be said to have already become old-fashioned.

311. There are only three Tahsils in the District, but a fourth Superintendent for the lower part of Ludhiána, which Tahsil is about twice as large as either of the others, was sanctioned, the separate charge being called Pakhowál. The survey was started in October—December 1878, first in Samrála, and last in Jagráon; and was completed in most of the District by the end of 1879. During the next six months the usual office tests were applied to the new maps and papers, two copies of the field map were made, a rough one for use in attestation and a more permanent one; and then the totals of area were worked out, and the assessment statistics prepared. After this the operation known as attestation of rights commenced, and lasted for about a year; while the fairing of the record and distribution of the new assessment were completed in about one and a half years more. It is impossible to say of any of these operations that it took exactly a certain time even in one Tahsil, for the work does not keep pace in all Munsarims' circles; and there was a difference of two or three months in the rates of progress made in the Superintendent's charges. The only real interruption to Settlement work was caused by the Census in the beginning of 1881, which threw us back some three months altogether. Had we been content with fairing the records and making them over to the District office, I think that the most of our establishment would have been available at the end of 1882; but it is usual and necessary for the Settlement Officer to have the *girdáwari* of the first year made, and the annual papers prepared by the Patwáris under his own supervision, bringing the record of mutations up to date; and some months were spent on these operations. As it was, our establishment began to be transferred to Amballa in February 1883, most of them left in April and May, and a few as late as August. The faired records were made over to the district between June and August; and this would have been done earlier, but that we had first to employ a large establishment for some months in the District Record Office on clearing it of useless records, in order to make room for the new Settlement papers.

312 The papers prepared were those prescribed by the present (1883) rules under the Land Revenue Act, and details of them are not therefore necessary. The procedure followed. The outline and field surveys were drawn on the plane table by the Patwáris themselves or by Amíns trained in the Dera Ismail Khán, Rohtak and other Settlements. I should mention that professional survey of the country was made in 1847-49 immediately after annexation; and that the maps of the Regular Settlement, though accurate for the system then in use, were not drawn to scale, and did not give the correct shape of the outline or of the fields.

In our survey *thakbast* or boundary maps of all the villages in a Patwári's circle were made out and compared with each other and with those of neighbouring circles before the field survey was commenced. From the *thakbast* a tracing was taken, and the field map filled in on this, the boundary proceedings and map being kept in a separate file. As the measurements proceeded each field was entered in the *khastrah*, or field index, and in the rough statement (*Chitta khataoni*) prepared for each proprietor from the pedigree table (*Shajrah nasab*) of the co-sharers, and also in a *parcha* or slip given to each sharer.

Attestation was done *on the spot* by all grades of officials, with the most satisfactory results. The Patwári (and his assistant, where one was appointed) in the first place compared his copy of the old with that of the new field map, and the last annual papers with those of the new measurements field by field, noting any discrepancies brought to light in this. Then he went over the land with the villagers, attesting the entry in the new papers as to each field (ownership, tenure, area, soils, &c.), and inquiring and making notes about any points that required this. Each proprietor had also been given at the time of measurements the usual rough list of fields in his holding, so that every precaution was taken to inform him of what entries were being made. The Patwári then attested for each holding the entry of ownership, cultivation, rent, &c., noting on the rough statements of holdings that he had done so; and made out with the aid of his notes the paper known as *Fard badar*, or list of discrepancies, containing all mutations and partitions to which effect had not been given in the annual papers, all errors that appeared in the former record, &c. This is the most important paper, as it connects the old record (the annual papers of the last year) with the new; and the reason for every alteration should appear in it. The Munsarim, Deputy Superintendent and Superintendent (the three grades of supervision in the Tahsil) tested the work done by the Patwári in each of the above operations, and themselves attested the rough statements of holdings and the *Fard badar*. All orders for alteration of the former record were entered in the *Fard badar*, the Superintendent's order being necessary in all cases of dispute. The filed records were prepared from the attested rough statements and the *Fard badar*. The other rough papers, the *Shajrah nasab*, or pedigree table and the *Naqsha chálát*, or statement of rights in wells, were attested at the same time as the holdings; and finally the Superintendent attested the *Wájib-ul-arz*, or administration paper of the village.

313. After announcement of the new assessment of each village, Distribution of the assess- it had to be distributed over the holdings of the ment. proprietors. The method of distribution was left entirely to the people themselves, who were asked to agree as to what form they would adopt. This they generally did without much dispute, and the result was worked out by the Settlement officials and

made known to each co-sharer, the amount of his former and new liability being entered on a slip given to him. I have already (in paragraph 85) said something of the manner in which the original forms of village tenure have been in this matter of internal rating lost sight of to a great extent. In making out the *Shajrah nasab*, or pedigree table, we were able in almost all cases to work out the subdivisions of the original shares, although these were sometimes very intricate. But the people seldom adhered to shares, except in the Bét villages of the eastern parts, where the soil is all much of the same quality, and there are no wells. Generally throughout the uplands differential rates were adopted; or a general one on cultivation, irrespective of quality. In the former case the distinction between irrigated and unirrigated was accepted as sufficient; or in villages where sand prevailed three classes of rates were used, *i.e.*, irrigated, *rousti* and *bhur*. In very few villages was the difference between *nidi* and ordinary well land recognized; and the relation between irrigated and unirrigated as fixed by the people themselves did not at all agree with what our estimate of the relative value of the lands would have led us to expect. The relation was usually expressed in fractions of the rupee. Thus the people asked to have their assessment distributed in the proportions of irrigated : unirrigated—

$$\frac{9 \text{ annas}}{7 \text{ annas}}$$

this was the actual ratio generally used, or 10 annas : 6 annas. Where three rates were used it would be irrigated : *rousti* unirrigated—

$$\frac{8 \text{ annas}}{5 \text{ annas}}$$

bhur unirrigated. The preference shown for an all round rate on cul-

$$\frac{3 \text{ annas}}$$

tivation, or for such an approach to it as the proportion 9 : 7, is a remarkable fact, of which no perfectly satisfactory explanation can be given. The number of villages in which each of the three methods has been employed is as follows:—

(1) By shares	...	...	...	221
(2) By a general rate on cultivation	...	...	...	203
(3) By differential soil rates	...	...	...	493
Total				907

The details of (3) are—

By rates on irrigated and unirrigated	...	...	201
By soil rates (three or more classes)	...	...	292

The new distribution did not effect much disturbance in the relative amounts payable by the village shareholders. It is the internal rating that brings home to each proprietor the fact that his land-tax has been increased, and complaints were freely made where any one of the co-sharers considered himself unduly assessed, first to the Superintendents, and, on appeal from them, to me. In all about 10 per cent. of the villages were up before me on appeal, and in very few was a second appeal made to the Commissioner. The disputes usually took the form of one subdivision of the village, which had better land or more wells, wishing to have the distribution by a

general rate, while the others wanted differential rates. Where the villagers themselves would not agree, the dispute was generally ended by the appointment of arbitrators.

314. In connection with the distribution I should mention that inquiry was made as to every well sunk within the last twenty years; and a lease was given exempting the land from the difference between the irrigated and the unirrigated rates of assessment for so much of this period as had not expired. We were as liberal as possible in giving these leases, and it is not unlikely that some were granted to people not strictly entitled to them; but liberality in this matter was, I think, necessary. The full assessment in these cases will come into force as the leases expire. In all protection by way of deferred assessment was given as follows:—

Samrála	...	...	...	...	2,120
Ludhiána	...	...	...	...	4,234
Jagraón	...	...	...	...	1,519
Total					7,873

315. In Appendix XI have been shown the expenditure on the Settlement, and the receipts from all sources up to December 31st, 1883, the time when the statement was made out. The total cost of the operations was Rs. 4,94,267 against which must be set off receipts, principally on account of money realized from proprietors and tenants for the faired extracts from the record, supplied at a charge of eight annas each (final *parchas*), and the contribution due from the Jágírdárs as their share of the expenses. This latter item may require correction, as it is taken from the statement of sums due which was submitted for sanction to the Settlement Commissioner. The net cost is by these reduced to Rs. 3,56,138. There was a small additional expenditure amounting to Rs. 4,627-10-6, incurred during the quarter ending 31st March 1884, up to the time that I finally left the District; and this raises the net cost to Rs. 3,60,766. If reference be made to paragraph 305, it will be seen that the immediate net gain to Government is Rs. 1,18,187, or 33 per cent. of the net expenditure. Thus in three years from the introduction of the new assessments the enhancement will have covered the expenditure incurred in the whole operations; and, as the new jamas in Samrála Tahsíl had effect from *Kharíf* 1881 and in the rest of the District from *Kharíf* 1882, most of the money spent has already returned to Government.

316. In 1878, when submitting the schedules for sanction, I reported that out of 296 Patwáris only 99, or one-third, could use the Persian character, and there were very few of the whole body who were really efficient. But I soon found that most of the men in office were past their work, and were quite willing to give place to the next generation, their sons or other relations, who had been properly

educated in the Government schools, and were very good *material* for instruction. Such as were hopelessly inefficient and had no Persian writing relations, were dismissed, after having a fair trial. Although the instruction of Patwáris had been going on for some time in the District, this must have been merely nominal; and much valuable time was consequently wasted by Settlement officials in endeavouring to bring them up to the state of efficiency in which we ought to have found them, besides that many could not from the first assist to the extent that was necessary in the preparation of the new record of their villages. About one-third of the survey was done by the Patwáris who were in office at the time; and a good deal more by assistants who have since been appointed to the office. The attestation was performed almost entirely by Patwáris, for I refused to allow assistance to any man till he had done some of this stage by himself, and only gave it where the work was too heavy to be completed by the one man in a reasonable time. In this manner the responsibility of the Patwári for the correctness of the record was insured. Most of the fairing of the record was also the work of the Patwáris, the assistants making the copy.

The Patwáris are now 300, distributed as follows:—

Samrála	...	...	...	...	83
Ludhiána	...	...	...	...	138
Jagráon	...	...	...	...	79

of whom 267 work in the Persian character, and 33 in Hindi. The necessity of regarding ancestral claims to some extent stands in the way of our getting the best men, but still I think that we have secured a staff of very fair educational attainments. Many Patwáris have passed the Middle School Examination, and a few even the Entrance. I have endeavoured during the last two years to have those that did not actually map instructed in the use of the plane table; and there are now very few who could not map if required to do so.*

* *Note.*—I should have mentioned that the pay of the Patwáris, which is levied at the rate of Rs. 3-2 per cent on the revenue, has been, with the sanction of the Financial Commissioner, funded; and the Patwáris have been arranged in three grades according to merit, thus:—

Grade.	Rate of pay per month.	No. of Patwáris.
I	12	88
II	9	149
III	7	63
Total .. ..	...	300

The Patwári cess will be collected with the revenue, and the pay distributed quarterly.

A Patwáris' Note-book, containing details of area, &c., for each circle and remarks on the Patwári himself, has been made out and handed over to the Deputy Commissioner. When a vacancy occurs in any grade it should be filled up by promotion; or, if it is in the lowest grade, by a new appointment from the list of accepted candidates. If the Note-book is maintained, there will be no difficulty in deciding the question of promotion.

Another object which I have endeavoured to attain in filling up vacancies is that the Patwári agency should

Classes from which the Patwári agency should be drawn.

not be recruited, as it has been heretofore, exclusively from the mercantile classes. I

think that there is much more chance that a man of the agricultural class will do honest work as a Patwári than a Sud or Khatri, with relations all about him engaged in the money-lending business, besides that we owe much more to the former as revenue-payers. The Suds of Ludhiána held almost every circle within ten or twelve miles of the City, besides nearly all the Kánungo appointments. The Patwáris in the Bét were of this tribe, and many of them carried on large money-lending businesses, openly and in their own names, with the Mahomedan proprietors. It took a good deal of trouble to break up the clique, which was a very strong one, the Suds being the most clannish tribe in the district, and many of them being high up in Government service ; and I have no doubt that every means will now be employed by them with a view to the recovery of their ascendancy. I would warn the Deputy Commissioner against having too many men of this tribe amongst the Patwáris. Where an opportunity occurred I have appointed a Mahomedan in the Bét ; and I have also given circles to Játs in the Dháia where I could ; and I hope that this policy will be continued. The list of accepted candidates will be found to contain a large proportion of men of the agricultural class, both Hindus and Mahomedans.

317. The present Kánungo agency consists of one Sadr and six

Kánungo agency.

Tahsil Kánungos and Naibs. This is of course wholly insufficient for the supervision of 300

Patwáris ; but, in anticipation of sanction, I have made arrangements for the scale recommended to Government for this District in the provincial scheme, as follows :—A Sadr Kánungo with an assistant for the District ; and for the Tahsils, one Tahsil or office Kánungo each, with *Girdáwar* or field Kánungos as follows :—

Samrála	...	...	...	...	...	4
Ludhiána	...	...	...	...	...	6
Jagrón	...	...	...	...	...	3

We ought perhaps to be content with this, but an extra *Girdáwar* will certainly be required in Jagrón when irrigation from the Canal is developed, if the necessity does not actually exist now, as I think it does.

318. General instructions as to the preparation of the annual

Annual papers.

papers by the Patwáris, and rules concerning these officials and the Kánungos, defining their

duties, &c., will soon be issued for the whole Province ; and it is, therefore, unnecessary that I should say much on the subject of the maintenance of the record. A set of instructions regarding the annual papers was drawn up by me and approved of by the Financial Commissioner ; and the system is now being acted on for the second year. The papers of the last year were made out under my own supervision,

and the work of this year is going on while I am in the District, so that there is every hope that the system will work, especially as the Deputy Commissioner (Mr. Wakefield) has personally interested himself in it, and has put it under the special charge of an Extra Assistant of some Settlement experience. The chief objects that we have endeavoured to attain are—(1) to have a correct return of the crops of each harvest; (2) to keep the record up to date by making out regularly the register of mutations, and giving effect to all changes in proprietary and cultivating rights. The *Girdáwars* are the backbone of the system, and these men, Patwáris selected because they have done the work of their circles well, have now had upwards of a year's training in the duties which they will have to perform. I have no doubt that the Patwáris and *Girdáwars* will be quite able to do their part of the work—to make the *girdáwari* and prepare the register of mutations for the attestation of the Tahsildár and Naib; and I am hopeful that these latter officials also will be capable of doing what is required of them—to attest on the spot the mutation register of each village. In Ludhiána Tahsíl an additional Naib-Tahsildár is certainly required (as before noted, we had two Superintendents and two complete supervising establishments in charge of it during Settlement operations); and I have recommended that one be appointed. The work will be much too heavy for a Tahsildár and one Naib.

319. The method in which the annual inquiry for the assessment of lands subject to the direct action of the River is made, and the papers prepared in the course of this, require to be noticed in some detail. The system entered in the *Wájib-ul-arz* of the villages at the Regular Settlement is that by which no action is taken where the increments or decrements are less than 10 per cent. of the whole assets of the estate; but in 1862 that known as the *Chak* system was introduced by order of the Commissioner. Under this a separate tract is marked off, comprising the area that is likely, within a reasonable time, to be affected by the action of the River; and no notice is taken of changes outside of this. The line may be drawn so as to include a whole village or only a portion of it, in the latter case the part within the limit being called the *kacha*, and that without it, the *pacha*. In the tract thus marked off all cases of changes due to the action of the River were taken up, and the assessment increased or decreased according to the result of the inquiry. In calculating the amount of assessment or remission the village rates of Settlement were used; but the officer making the assessment was not bound to these, a general discretion being allowed of fixing what amount appeared suitable for the area to be assessed. As a rule, however, the result of the rates was adhered to. The chief faults that appeared on an examination of the working of this system were—*first*, that the rates in many cases differed very much in adjoining villages. Thus it did not matter if a very low rate were applied to the few acres making up the whole land of a village at the time of

Regular Settlement; but when many hundred acres had been added and were assessed at this rate, because it was that of Settlement, great inequalities resulted. In many cases the land of one village was found to be paying double as much as exactly the same quality of land in that adjoining. *Secondly*, land was assessed either as *dofasli* or *ekfasli*; and the question of which rate should be applied came to depend entirely on how the Patwári classed it. If two crops or one of sugarcane were raised in a field in any year, it was liable to be assessed at the higher rate and continued to be, although never again so cultivated.

320. The *Chak* system has now been retained with certain modifications, the result of a great deal of discussion; and these I will next describe. The first step taken by us was to re-arrange the line of delimitation, where this had become necessary on account

The same continued:
limit of the *kacha* and
packa Chaks.

of changes in the course of the River during the last twenty-five years. In doing this I endeavoured to meet the wishes of the people as far as possible, although it was not easy to satisfy them, and at the same time have a division that would last for even a short period. Outside of the limit new cultivation will not be liable to assessment during the term of Settlement, just as in any other part of the District; and it is not until the people of a village are compelled to apply to have their lands, or the *packa* portion of them where there are two *Chaks*, transferred to the *kacha* that any account will be taken of changes in the area of cultivation. I think that it is this confining the inquiry to as small an area as possible that constitutes the strong point of the *Chak* system. It is, of course, unavoidable that transfers from and to the *kacha* will hereafter become necessary as changes occur in the course of the River, for it would have deprived the system of its chief advantage if we had fixed such a limit as would be likely to last without any alteration at all for the term of the new Settlement; but I do not anticipate any difficulty in meeting cases of this kind as they arise. The provisions sanctioned as to transfers to and from the *kacha* are on the one hand that, when a village with land in the *kacha* has for five years remained unaffected by the direct action of the River, the Deputy Commissioner may give it a fixed assessment; and on the other hand a village hitherto in the *packa* may be transferred to the *kacha* on an application to the effect that it has become liable to such direct action.

Rules for assessment of
land in the *kacha*.

321. The following principles of assessment were finally laid down after a good deal of correspondence:—

(1.) All culturable waste land to pay one anna an acre in its grazing aspect.

(2.) New cultivation to be assessed as follows:—

First year	one-quarter	} Of the <i>ekfasli</i> rate sanctioned for the Circle.
Second year	...	...	one-half
Third year	...	...	three-quarters
Fourth year	...	...	the whole

Uniform rates for each Circle were thus introduced; and it was at the same time decided that the assessments given by them should be adhered to absolutely, the power of departing from them as he thought fit, which the assessing officer was allowed formerly to exercise, being withdrawn. It was thought advisable to provide that new cultivation should not, during the period of the revised Settlement, be ever liable to bear the *dofaski* rate. The loss to Government involved in this last provision is likely to be inconsiderable; and I think it was wise to deprive the subordinate officials of the power hitherto enjoyed by them in this respect. We have classed the Bét land very carefully with the crop returns of two or three years to guide us; but this was done under very strict supervision, and the result is reliable. It would be too much, however, to expect that the Patwáris and Kánungos would do it properly from year to year. Reductions of assessment on account of abrasion or other injury will be given exactly by the soil rates, so that the assessment of a village or portion of village in the *kacha* will be in any year the exact result of the revenue rates. The file of correspondence relating to this matter has been made over to the District Office; and for further details I would refer to it. The conditions of assessment in villages liable, or likely to be liable, to the action of the River will be found in clause 14 of the Administration papers; and a vernacular set of instructions has been printed and distributed to the Patwáris and supervising agency.

322. Some account has already been given (paragraphs 88—94) of Jágir assignments of revenue : general account. the principal Jágirdárs of the District. The Maloud family (paragraph 88), which alone enjoys half of the whole jágir income of the District, had established itself under the Empire. The others are mostly the descendants of the petty Chiefs or Confederacies who, on the downfall of the Delhi Empire at the close of the last century, partitioned the country between them, and came under our protection in A. D. 1809 in the manner described in Chapter II. These Chiefs and Confederacies were at that time virtually independent, though it is probable that, but for our interference, they would all have been eventually absorbed by their more powerful neighbours. A few of the Jágir families, again, have been from the first dependent, having originally had an assignment of a few villages made them by some one of the more important Chiefs (*e.g.*, Kapurthala, Nábha), and being transferred to us in the annexations of 1846. From 1809 till the outbreak of the first Sikh war in 1845 we had little to do with the internal administration of the estates of the Jágirdárs, who were allowed to govern much in their own way; but at the close of the Satlej Campaign in 1846 a great change was effected in the status of all but the seven important Cis-Satlej Chiefs, who were maintained in the full enjoyment of that virtual independence which is allowed to protected States (See Griffin's "Rájas," where the proclamation of the Government of India on this subject is given *in extenso*). All villages not belonging to the seven excepted Chiefs were incorporated in our territory along with what we had acquired by conquest and con-

fiscation from Lahore, Nábhá, &c.; but even after this we exercised but little authority within the estates of the Jágírdárs, for we only abolished the transit duties and deprived them of their police jurisdiction in the first instance. When, however, the second Sikh war was followed by the annexation of the whole of the Panjáb, their power was still further curtailed; and finally, about 1850, it was decided to substitute for their hitherto undefined exactions from the people a fixed cash revenue demand. This last measure, when carried out, reduced all Jágírdárs alike to the position of mere assignees of Government revenue; and it was a great blow to most of them. They had considered themselves as lords of the soil; and I do not think that their rights over the land were at all inferior to those of the Zamindárs of Bengal. The Jágírdárs had realized from the cultivators a full proprietor's share of the produce, and there was really no limit to their exactions, except the fear of driving away their villagers.

To most of the families who had before been independent the jágírs were continued in perpetuity, unless, of course, they had compromised themselves in the Sikh war, and were punished for this by confiscation. The tenures of the others were considered on annexation, and more or less favorable terms were given, some being maintained in whole or in part for the lives of the holders only; and, when this course was pursued, subsequent lapses have reduced the villages to the condition of *shared*. In other cases the original grants were only of a portion of a village.

323. The Chiefs and Confederacies had always been liable to furnish tribute or levies, or both, to the paramount power; and the contribution had taken the latter form on their coming under our protection. When the final change to a fixed cash assessment was introduced after 1849, it was natural that the irregular demands for which the Jágírdárs were liable should be replaced by a certain tribute. This in most cases took the form of a contribution at the rate of so much (one to four annas) per rupee of revenue; but for some of the confederacies it was the estimated cost of maintaining a certain number of horsemen or footmen. In Ladhrañ and most of the small jágírs the rate of commutation is two or four annas per rupee of revenue; while in Maloud, it is two annas, except in the branch of Sardar Mit Singh, in whose favour a reduction was made to one anna on account of services performed in the Mutiny. I may mention here, as an example of the second form of payment, and as the solitary instance in the District of the *istanwári* tenure, the case of the village of Lalton. This is held by the descendants of a Garewál Jat, called Chauhdri Gahnda, subject to a fixed payment of Rs. 1,100 per annum, and the cost of maintaining four horsemen at Rs. 16 each per mensem, i.e., Rs. 768 per annum more.

For the collection of the commutation money in some of the minor jágírs, where the shares are much subdivided, the head of the family has been appointed *Sarkardas*, or headman; and is paid by a percentage deduction from the amount which he brings into the Government treasury for the whole jágír.

324. The Jágírdárs, besides enjoying the revenues of their villages, will be found in many cases to hold in absolute ownership a considerable area of land. This is usually the *Bér*, or waste land reserved by the ancestors of the family for their own use, as a grazing ground, for the supply of firewood, &c. These *Bérs* have, with the exception of one or two in the Maloud pargana, been brought under the plough long ago, and are cultivated by the tenants of the Jágírdárs. The land of absconding cultivators was also considered as belonging to the Chief, and the Maloud Sardars acquired a considerable amount of landed property in this way just after the introduction of the cash demand of the Regular Settlement.

325. The following abstract statement gives all the necessary details as to each of the existing jágírs of the District :—

Number.	Name of Jágír.	Name of Jágírdár.	Number of villages.	Jágír or Shared.	Revenue of Jágírdár.	COMMUTATION MONSY.		REMARKS.
						Rate.	Amount	
1	Ladhran ...	Sardár Shamsher Singh and others ...	25	Jágír	21,198	Two annas per rupee	3,014	A fraternity of Jágírdárs, very numerous.
2	Jabu Mazra ...	Sardár Ganda Singh and others ...	8	Do. ..	10,722	Ditto ...	1,340	
3	Bhari or Kotla Jadla ...	Lál Singh and others ...	4	Do. ...	7,611	Ditto ...	951	
4	Soutiwála ...	Hira Singh and others ...	3	Do. ...	5,231	Ditto ...	654	
5	Dhfa Malina ...	Sardár Kirpál Singh ...	1	Do. ...	2,206	Ditto ...	276	As in No. 4.
6	Khosa ...	Bishen Singh ...	1	Do. ...	511	Ditto ...	68	
7	Shamspar ...	Mit Singh and others ...	2	Do. ...	2,587	Four annas per rupee	617	
8	Kotla Ajner ...	Jodla Singh and others ...	4	Shared	2,066	None.	361	
9	Nishanawála ...	Bishua Singh and others ...	4	Do. ...	2,343	361	Ditto Charitable grant.
10	Salondi (fraternity) ...	Dasoudha Singh and others ...	4	Do. ...	1,703	None ...	.....
11	Bágrían ...	Bhai Narain Singh ...	1	Jágír	1,109	None ...	.....
12	Jalewála ...	Mt. Kishen Kour ...	1	Share-d	293	Ditto ...	.....
TOTAL TAHSIL SAMRALA ...			58	60,493	7,311	
1	Rangarh ...	Sardár Utam Singh ...	33	Jágír	43,136	Two annas	5,991	These four are the branches of the Maloud family.
2	Maloud ...	Sardar Banoen Singh ...	12	Do. ...	15,780	One anna	987	
3	Ditto, (younger branch) ...	Sardár Sundar Singh ...	6	Do. ...	7,792	Ditto ...	487	
4	Ber ...	Sardár Bulwant Singh ...	13	Do. ...	18,369	Two annas	2,294	
5	Khosa ...	Dewa Singh and others ...	4	Do. ...	3,353	Ditto ...	419	A grant from the Maloud family. See No 11 of Samrala.
6	Pir Kot ...	Pir Dulip Chand ...	1	Do. ...	1,035	Ditto ...	129	
7	Bágrían ...	Bhai Narain Singh ...	1	Do. ..	4,952	One anna	229	
8	Arnauli ...	Bhai Anokh Singh ...	1	Do. ...	1,832	Two annas	229	
9	Háns ...	Samand Singh and others ...	5	Shared	2,500	None	
10	Miscellaneous ...	.....	14	Do. ...	16,632	.....	2,074
TOTAL TAHSIL LUDHIANA ...			90	.....	1,09,387	.....	12,239
Jagron Tahsil, miscellaneous petty jagírs ...			13	Shared	7,723	None	.....
TOTAL OF THE DISTRICT ...			161	1,77,603	19,550	

Out of the revenue of the Jágírdárs shown in column 6, they have to pay the commutation money shown in column 8. The Jagráon Tahsíl was held entirely by the Rais in the first place, and after them by the Kapurthala Chief, from whom we annexed it; and the jágírs in it are really charitable grants of whole village or shares, there being nothing to correspond with those held by the families and confederacies of the other Tahsíls.

The Jágír Registers have been maintained in the District Office according to the form prescribed in the Directions to Revenue Officers for *Pattidári* tenures; and these registers we have now made out afresh, bringing them up to date.

326. The usual inquiry was made in each case where a plot of

Máfi. land was found to be held revenue-free (*máfi*), with the view of testing the validity of the autho-

rity under which it was held, whether the area was covered by the sanction, and whether the persons in possession were entitled to the grant under the original terms. The grants of the District were of the usual three classes—(1) in perpetuity, (2) for the maintenance of institution, (3) during the life or lives of the grantees; but the greater part of them were of a fourth class, (4) sanctioned for the term of the Regular Settlement. With respect to (1), (2) and (3) our inquiries brought to light no discrepancies of any importance, and only one or two cases had to be reported for fresh sanction; but in all cases of grants for the term of the expired Settlement, fresh sanction by Government or by the Financial Commissioner was necessary.

Grants for the term of the expired Settlement.

These grants (4) were either personal, in favour of Brahmíns or others of the priestly class; or they were for the support of some religious or charitable institution. Most of them were petty and unimportant, and the sanction under which they were held was that of the Settlement Officer or of the Commissioner, accorded between 1850 or 1853. It had clearly never been the intention that these grants should be enjoyed in perpetuity, or they would not have been treated differently from the more important ones, which come under classes (1), (2) and (3). The principles on which we have now dealt with them are as follows. Where the object of the grant was the support of some institution, and this was found to be maintained, continuance was recommended and sanctioned; where the grant was a personal one, and the original grantee or his children were in possession, the same course was followed; but where the grant was personal, and was held by a number of sharers, the descendants in the third or fourth generation from the original grantee, we generally recommended resumption, or rather that the grant should be allowed to lapse. The new sanction usually continues the grant for the term of the revised Settlement or for the life of the holder, whichever period expires first; but, in the case of the grantee dying within the period of the Settlement, the Commissioner has the power of continuance

to the heirs for the remainder of this period. I should mention here that all cases in which resumption of grants of class (4) was recommended were reported to the Financial Commissioner in a vernacular register; and that all those proposed for continuance were entered in two sets of English registers, one for those cases in which the area was under ten acres and the sanction of the Financial Commissioner was sufficient; and the other for those which required the orders of Government, because the area was in excess of ten acres.

The general result of the inquiries as to cases in which the previous sanction was for the term of Settlement is as follows:—

			Number of cases.	Area.
Resumed	...	...	281	1,216
Continued	...	...	490	3,936

The following is a statement of the number of cases and the area of the petty grants of all kinds in the District as they now stand:—

NAME OF TAHSIL.	HELD IN PERPETUITY WITHOUT CONDITION.		HELD FOR MAIN-TENANCE OF INSTITUTION		HELD FOR LIFE OR LIVES.		HELD FOR THE TERM OF SETTLEMENT.		TOTAL.	
	Number of cases.	Area in acres.	Number of cases.	Area in acres.	Number of cases.	Area in acres.	Number of cases.	Area in acres.	Number of cases.	Area in acres.
Samrála	37	61	62	263	37	226	64	625	190	1,175
Ludhiána	35	259	110	1,451	74	810	227	1,943	416	4,463
Jagraón	33	381	64	773	51	714	183	1,202	331	3,070
Total	105	701	226	2,487	162	1,750	474	3,770	967	8,708

New registers of the existing grants have been prepared in vernacular and made over to the District Office.

327. I have referred in paragraph 81 to the appointment of Zaildárs. The system was, after a good deal of discussion, introduced, the appointment of Zaildárs to be paid by a deduction of 1 per cent. from the revenue being agreed to by Government. The people themselves were strongly opposed to the measure from that feeling of dread of one of their own class being entrusted with any sort of authority over them, which is characteristic of, but perhaps not peculiar to, the agricultural population of the District. There were no special reasons why the system should not work in this District as well as it has done in others, except that it was thought that it might interfere with the semblance

of local authority still preserved to some of the larger Jágirdárs. The jágirs of Maloud and Ladhran were, therefore, excluded from its operation. In the rest of the District the Zails were arranged

Arrangement of zails. within the Tahsils, so far as was possible, according to tribes; although in many places it was found quite impossible to group together villages so as more than partially to secure this object. The Bét tract is in the hands of a Mahomedan population, belonging to the Rájput, Gujar, Jat, Araien and Awán tribes; but the villages of these are, as a rule, so mixed up that, although it may be said that one or other of the tribes predominates in a certain portion of the lowlands, we could not arrange any single Zail so as to consist entirely of villages of the same tribe. Mahomedan Rájputs and Jats own most of the Samrála and Upper Ludhiána Bét tracts; while in the lower part of Ludhiána and in Jagráon the Gújars are in a great majority. Amongst the Jats of the uplands it was in like manner impossible, except in the case of the Garewáls, whose villages are grouped together to the south-west of Ludhiána, to arrange the Zails by *gots*.

The Zails were so arranged that the revenue of each should be as nearly as possible Rs. 20,000 in order to give an allowance of Rs. 200 to each Zaildár.

Size of zails.

A zaildár was selected by me in communication with the Deputy Commissioner from amongst the leading Lambardárs in each Zail. I think that the appointments have, on the whole, been such as to win the confidence of the people; but in some cases there was undoubtedly difficulty in finding any one fitted for the position. There has hitherto not been much inducement for members of the agricultural class to come forward as leading men; but I think that these appointments are likely to furnish an incentive. As vacancies occur it will be possible to take the votes of the Lambardárs without any danger beyond that of the free use of bribery, which appears to be the necessary result of giving a small body of voters the right to nominate to a paid appointment. The ultimate success of the scheme will depend a good deal on how it is worked, and what use is made of the Zaildárs. If the true position of the Zaildár be borne in mind, that he is a representative of the people on whose assistance Government officials may rely, and not merely the man to whom commissions ought to issue in civil cases when he is not acting as assistant to the Deputy Inspector of Police, he will have little opportunity of abusing his power. It is in my opinion the tendency to use the Zaildárs as the sole means of communication between Government and the people, and to treat them as officials, that has afforded the opportunities for misconduct, of which they are said to have taken advantage in other Districts. The peculiar disadvantages under which the system appears to me to labour in Ludhiána is that mentioned at the commencement of this paragraph, the weakness of the tribal organization; for I know of no District where want of union amongst the agricultural population is more marked. If

Mode of appointment.

villages lie in groups, each belonging to one tribe or *got*, it is certain that one or two men will be regarded as the heads of the tribe or *got*; but in Ludhiána there is very little tribal feeling anywhere, and almost every single Lambardár in each zail was a candidate for the appointment.

328. The following is a complete list of Zails and Zaildárs of the District according to the appointments made by me. For further particulars I would refer to the Zaildár's note-book and map in the District Office :—

List of Zails in the Ludhiana District.

Number	Tahsil.	ZAILS.		No. of villages.	Land Revenue (with Malí, &c.)	Prevailing tribes (M.=Mahomedan H.=Hindu.)	Name, &c., of Zaildars.
		Number in Tahsil.	Name.				
1	SAMBHALA.	i	Bahlolpur ...	27	16,199	M. Jats and Rájputs	Fattah Khán, Pathán, of Bahlolpur.
2		ii	Sainsowal ...	42	17,255	Ditto	Fattah Khán, Rájput, of Sainsowal.
3		iii	Podwat ...	15	18,682	Ditto with a few H. Jats, &c.	Faiz Mahomed, Jat, of Podwat.
4		iv	Kutála ...	15	17,170	H. Jats and Rájputs	Sandal Khán, Rájput, of Kutála.
5		v	Jágir Ladhran ...	25	24,853	.....	No appointment.
6		vi	Utalán ...	13	15,774	H. Jats	Rahál Singh, H. Jat, of Utalán.
7		vii	Malmazra ...	14	21,555	Ditto	Rám Singh, Hindu Jat, of Malmazra.
8		viii	Bhari ...	11	20,805	Ditto	Lál Singh, H. Jat, of Bhari (Jágirdar).
9		ix	Kheri ...	17	17,635	Ditto	Sardáni Nihál Kaur, Jágirdar's widow of Kheri.
10		x	Lohár Mazra ...	15	18,577	Ditto	Sher Singh, H. Jat, of Lohár Mazra.
11		xi	Baháwan ...	12	20,527	H. Jats and M. Rájputs	Nabí Baksh, Rájput, of Baháwan.
12		xii	Saloudi ...	7	16,210	H. Jats	Jowáhir Singh, H. Jat, of Purba.
13		xiii	Rapálon ...	18	17,231	Ditto	Kálm Singh, H. Jat, of Rapálon.
14		xiv	Mohanpur ...	13	19,535	Ditto	Jhábá Singh, H. Jat, of Mohanpur.
15		xv	Aikoláha ...	15	19,172	Ditto	Kishen Singh, H. Jat, of Fir Kishen Singh.
16		xvi	Isru ...	11	8,489	Ditto	Kálm Singh, H. Jat, of Isru.
17		xvii	Jabbomazra (Jágir villages.) ...	9	11,597	Ditto	One man appointed to represent each of the two branches of the family.

List of Zails in the Ludhiana District—Continued.

1	2	3	4	5	6	7	8
Number.	Tahsil.	ZAILS.		No. of villages.	Land Revenue (with Mah. &c.)	Prevailing tribes (M = Mahomedan H = Hindu.)	Name, &c., of Zaildars.
		Number in Tahsil.	Name.				
19	LUDHIANA.	i	Baliahwāl ...	25	16,954	M. Jats, Rājputs, Gujars, &c.	Didar Bakhsh, M. Jat, of Baliahwāl.
19		ii	Katāni Kalān ...	18	17,666	H. Jats ...	Dewa Singh H. Jat, of Katāni.
20		iii	Chounta ...	24	19,255	M. Rājputs Gujars, &c.	Same Khān, Rajput, of Chounta.
21		iv	Mattewāra ...	27	18,038	Ditto ...	Fattch Khān, Rājput, of Mattewāra.
22		v	Bholapur ...	17	20,318	Ditto H. Jats ...	Nihal Singh, Jat, of Bholapur.
23		vi	Gil ...	12	17,745	H. Jats ...	Khazān Singh, Jat, of Gil.
24		vii	Sāhnewāl ...	15	19,919	Ditto ...	Mahāba, Jat, of Sāhnewāl Kalan.
25		viii	Umedpur ...	15	17,765	Ditto ...	Fouju Singh, Jat, of Umed- pur.
26		ix	Lalton ...	12	21,686	Ditto (Garewāl got)	Udeh Singh, Jat, of Lalton (Garewāl).
27		x	Badowāl ...	16	21,593	H. Jats (Garewāl)	Nihal Singh, Garewāl of Badowāl.
28		xi	Sunet ...	12	19,221	H. Jats ...	Partāb Singh of Jawadi.
29		xii	Ludhiana ...	34	18,057	M. Gujars, Rājputs and miscellaneous classes.	Mahbub Ali Shah, Sajad, of Ludhiana.
30		xiii	Kasabād ...	30	21,515	Awans ...	Shāh Mahomed, Awān, of Kasabād.
31		xiv	Norpur ...	25	16,975	M. Gujars, &c. ...	Roshan, Gujars, of Kharak.
32		xv	Dākha ...	12	17,830	H. Jats, &c. ...	Rutal, H. Jat, of Dākha.
33		xvi	Raipur ...	9	19,540	H. Jats (Garewāl) ..	Sedha Singh, Garewāl of Raipur.
34		xvii	Shānkar ...	14	21,237	H. Jats ...	Hemraj, Jat, of Shānkar.
35		xviii	Butāri ...	6	8,057	Jats, Kalals, &c. ...	Samand Singh, Jagirdar (Kulāl).
36		xix	Ghungrāna ...	13	17,474	H. Jats ...	Jowāhir Singh, Jat, of Ghungrāna.
37		xx	Dharkot ...	11	18,875	Ditto ...	Hira Singh, Jat, of Dharkot.
38		xxi	Pakhowāl ...	11	17,355	Ditto ...	Datta Singh, Jat, of Pakho- wāl.
39		xxii	Tājpur ...	14	18,360	Ditto and M. Rāj- puts.	Dalla, Jat, of Tājpur.
40		xxiii	Lalākā ...	9	18,833	H. Jats ...	Nand Singh, Jat, of Lalākā.

No appointments in Pargana Maloud.

List of Zails in the Ludhiana District—Concluded.

1	2	3	4	5	6	7	8
Number.	Tahsil.	ZAILS.		No. of villages.	Land Revenue (with Mah, &c.)	Prevailing tribes (M = Mahomedan H = Hindu.)	Name, &c., of Zaildars.
		Number in Tahsil	Name.				
41	JAGHAON.	i	Bhundri ...	22	15,928	M. Gújars, Arains, Rájputa.	Ali Bakhsh, Gújar, of Gorsian.
42		ii	Sidhwan ...	21	20,408	H. Jats, Arains, Gújars.	Vacant.
43		iii	Ghálíb Kalán ...	13	19,880	H. Jats, &c. ...	Bukan Singh, Jat, of Ghálíb Kalán.
44		iv	Sawadi khás ...	16	20,820	H. Jats ...	Khazán Singh, Jat, of Sawadi.
45		v	Mandiáni ...	12	16,960	Ditto ...	Narain Singh, Jat, of Mandiáni.
46		vi	Háns ...	9	17,550	Ditto ...	Samandú, Jat, of Háns.
47		vii	Jagrón ...	14	21,075	Ditto Gújars, Rájputs, &c.	Sharif Hasan, Saiad, of Jagrón.
48		viii	Káonki ...	10	16,625	H. Jats. ...	Panjáb Singh, H. Jat, of Kaonki.
49		ix	Akhára ...	7	15,425	Ditto	Natha Singh, Jat, of Rumi.
50		x	Mallah ...	5	12,735	Ditto ...	Mahla Singh, Jat, of Mallah.
51		xi	Lakha ...	5	18,550	Ditto ...	Sahab Singh, Jat, of Lakha.
52		xii	Bassian ...	10	18,860	Ditto ...	Rám Singh, Jat, of Sibian.
53		xiii	Raikot ...	10	22,430	Ditto and M. Rájputs, &c.	Rai Ahmad Khán, Rájput of Talwandi.
54		xiv	Akálgarh ...	11	19,750	H. Jats and others..	Ganesh Mal, Khatri, of Akálgarh.
55		xv	Mohi ...	9	21,175	H. Jats ...	Anup Singh, Jat, of Mohi.

329. In addition to the Zaildars it was at first proposed to appoint Ala Lambardárs in the larger villages ;

Zamindári ináms.

but for this was substituted, after some discussion, a scheme for granting to selected Lambardárs *ináms*, to be deducted from the revenue. The total of these *ináms* was not to exceed $\frac{1}{4}$ per cent. of the assessment. Lists of the Lambardárs selected for these grants were submitted by me, and received the sanction of Government. As far as possible the *ináms* were confined to villages with more than three Lambardárs, as the object of the Ala Lambardári system, of which they were to take the place, was the strengthening of the Lambardári agency in large villages ; but it was also desirable to distribute them over the District as much as possible, and the size of the villages varies a good deal in different parts, so that I found it necessary to give one or two in villages with less than four Lambardárs. The *ináms* were of three classes—Rs. 20, 25 and 30 per annum, and averaged Rs. 25, which gave two to each Zail.

I here transcribe, in explanation of these *ináms*, and for reference, the conditions on which they have been granted.

(1.) "They are sanctioned for the term of Settlement, and are within that term held for life, conditionally on good conduct and the rendering of assistance in the district administration."

(2.) "They are to be vacated as the appointment of the holder to a Zaildárship.

(3.) "As lapses occur, through death or otherwise, the Deputy Commissioner has the authority, with the concurrence of the Commissioner, to appoint a successor selected from the Lambardárs of the same Zail; and the Commissioner's orders as to the appointment are final.

(4.) "It is distinctly laid down that the *ináms* are not of an hereditary character."

330. As the next chapter is merely an analysis of the Record of Customs, I may conclude this account of our operations with a notice of the principal officers

Notice of officers.

who served under me.

Munshi Charanjít Lál (since deceased) was our Extra Assistant Settlement Officer up to the end of 1882, when he was appointed to officiate as Extra Judicial Assistant. A great part of the civil and revenue case work fell to his share, and he also gave material assistance in the preparation of the record. Munshi Ahmad Bakhsh, the best of the Superintendents, was appointed to succeed Charanjít Lál as Extra Assistant, and he has now gone to Ambálla in the same capacity. Munshi Ishar Dás, who held charge of Jagráon Tahsíl as Superintendent for three years, till his transfer to Rawal Pindi, earned for himself a great reputation for honesty; and the work done under his supervision was undoubtedly the best in the District. Munshi Jodh Singh came from Rohtak and took charge of the Ludhiána Tahsíl after the completion of measurements. He is a Settlement official of well known ability, and showed good powers of organizing and managing a large establishment. He has now been appointed Tahsildár of Jagráon, and I am glad to be able to leave him behind me in the District, for his knowledge of Settlement work is likely to be most useful. Of the Deputy Superintendents Karm Shah and Amír Chand were the best; and they have now been promoted to the post of Superintendents, having latterly officiated in this capacity under me.

CHAPTER X.—THE RECORD OF CUSTOMS.

331. The following account of the usual inquiry made at Settlement as to Tribal and Agrarian custom I had intended at first as an appendix (No. XV); but under orders of superior authority it has now been included in the body of the Report as a final chapter. It will be available as a volume in the series of "Punjab Customary Law," and may be styled "An account of the Tribal and Agrarian Customary Law of the Ludhiāna District." In Vol. III of the series the inquiry into customary law is divided into two parts:—

(I).—Questions of tribal custom,

(II).—Questions of local or agrarian custom;

and, following this order, I will first give an analysis of the new record of Tribal Custom.

PART I.—Tribal Customs.

332. In paragraphs 43 to 57 of this Final Report will be found a description of the tribes and subdivisions of them amongst which the population of the District is distributed. I am not aware that it was ever intended that these inquiries into custom were to extend beyond the land-owning tribes; and I should, in any case, have had great hesitation in undertaking such a task as to investigate the customs of the mercantile and artizan classes in a district with such large and populous towns. What we have recorded, then, are the customs of those tribes only which come under the class of *agriculturists* in the statement of population given in paragraph 43. These make up more than half of the total population of the District.

333. For the purpose of attesting the customs each of the three Tahsils was taken up separately. Except in the case of the Hindu Jats it was not found necessary to make out more than one Code for each tribe, because the numbers belonging to no other in any one of the Tahsils are so great as to make it expedient to have subdivisions for this purpose; and there is no diversity of custom inside the tribes. I have explained in paragraph 50 the manner in which the clans of Hindu Jats are intermixed even within the same village; and, except in the case of the few mentioned there, we could scarcely have done the attestation and drawn up a separate Code for each of the *gots*; besides that it would have been useless to do so, for the customs of one *got* do not really differ from those of another. We, therefore, in dealing with the Hindu Jats, first separated off the

few *gots* which were of sufficient importance to have Codes of their own, and arranged the remainder in each Tahsil according to locality, making use of the old *pargana* subdivisions for the purpose. The following statement shows the number of codes attested for the whole agricultural population of the District :—

Name of Tribe.		Tahsil Samrála.	Tahsil Ludhiána.	Tahsil Jagráon.
Mahomedan.	Rájput ...	Whole Tahsil.	Whole Tahsil.	Whole Tahsil.
	Jat ...	Ditto.	Ditto.	None.
	Gujar ...	Ditto.	Ditto.	Whole Tahsil.
	Araich ...	None.	Ditto.	Ditto.
	Dogar ...	None.	Ditto.	None.
	Awán ...	None.	Ditto.	None.
Hindu.	Jat ...	Ps. Bahlolpur and Utálan.	<i>Got</i> Garewál. <i>Got</i> Gil. Bhandher. Ps. Sábnewál and four others. P. Ghungrána. P. Pakhowál	<i>Got</i> Sidhu. <i>Got</i> Gil. Ps. Jagráon and Akálgarh. Ps. Sawadi, Bhundri and Sidhwan. Ps. Raikot and Hatur.
		P. Khanna, iláqa Kheri.	P. Ghungrána.	
		P. Khanna, iláqas Isru and Khanua.	Iláqa Maloud. Iláqa Jangal.	
	Rájput ...	Whole Tahsil.	None.	None.
	Lobána ...	Ditto.	Whole Tahsil.	Ditto.
	Saini ...	Ditto.	None.	Ditto.

(In the above P. stands for Pargana).

This arrangement gives thirty-four Codes of Tribal Custom.

334. When the agricultural population had been arranged in the manner described above by tribes or subdivisions into manageable groups, representatives were selected for every village or portion of a village belonging to each group. The Lambardárs were included, and to them were added others who were known as leading men amongst the co-sharers. A Deputy Superintendent was then put in charge of the work for each group. He first proceeded to search the *shajrah nasab*, or pedigree table, of each village, and to note all instances of inheritance, transfer, &c., that appeared likely to be useful in the attestation. The representatives of each group were then called on a date fixed; and the questions carefully explained to them. Their answers were taken down with such instances as they could give; and were attested in detail either by the Extra Assistant Settlement Officer or by me, the work of recording and attesting the answers taking two or three days for each group. I had intended to do the whole of the attestation myself, and completed it for more than half of the District; but press of other work compelled me to leave the rest to the Extra Assistant Settlement Officer, and to content myself with checking the records after their completion.

335. The questions were taken from Mr. Tupper's work on "Punjab Customary Law," Vol. III, Part I,

The questions; and the manner in which they were received. with a few alterations which were necessary to make them suit the capacity or the requirements of the people. The representatives evinced the greatest interest in the whole proceedings, and discussed each question in a manner that showed them to be fully alive to the importance of the inquiry and anxious that their customs should be faithfully recorded. There was seldom any diversity of opinion as to what answers should be given; and, where instances of dissent occurred, they were almost always founded on some personal interest, the objector having a case of his own which would not fit in with what the representatives were anxious to have declared to be the custom. There was found to be diversity of practice on some points; but the almost perfect unanimity as to what the rule ought to be was most striking.

336. It is not necessary that I should enter into any general

General remarks on the subject of customary law.

discussion on Tribal Custom, especially after the able and exhaustive treatment that the subject has received in Mr. Wilson's account of the customary law of the Sirsa district and in the other volumes of the series. All the more important points that have arisen in our inquiry are fully considered in the following analysis, and little beyond the description that I have given of our proceedings is required by way of preface.

There are one or two points, however, to which I may usefully refer.

Danger of custom becoming crystallized too soon: or in a wrong form.

I think that a mistaken view is still generally prevalent amongst those entrusted with the administration of the law of what ought to constitute a valid tribal custom. It is usually considered by the Civil Courts, following ideas derived at first or second hand from English law, that such a custom is established if it fulfils the conditions requisite for all customs, *i.e.*, is not contrary to law or morality, is certain, &c., and if it is supported by sufficient number of precedents. It appears to me that it would be most dangerous in a country like the Panjáb, in which after all law and order have been established for only a generation, and of parts of which the resources are as yet only developing, to accept instances that occurred in an early stage and in a condition of society widely different from the present, and on them to found a hard-and-fast rule to be applied to all cases that may arise in the future. To do so would be to ignore, or rather to strangle, what is aptly termed the *law-creating faculty* of the people, which is their only means of adapting a custom to an altered condition of things. This is an element in all inquiries into custom that ought to be recognized and given full weight to. Against a rule which is once taken as established by the Courts there is apparently no remedy except legislation, however inapplicable the rule may have become; and so much of the substantive civil law of the country as comes within the scope of these inquiries into Tribal Custom will not, I trust, be the subject of legislation for a very long

time. In seeking proof of a tribal custom regard should not be had merely to the few precedents, or the statements of the witnesses produced in evidence by the parties to a particular case in which the question of the custom is in dispute, but rather to the general expression of the tribal opinion at a time when, owing to the absence of disputes, this can be relied on as unprejudiced. I was much impressed with the perfect unanimity displayed by the representatives of some groups in rejecting what had been held by the Civil Courts of the District to be an established custom on the force of the precedents which had actually occurred, but certainly were not a sufficient basis for a rule.

337. The element for which allowance should be made in endeavouring to derive a rule of tribal custom from precedents is whether the state of society and the conditions under which they occurred are such as to make the instances applicable to cases arising in the present time. Customs must alter with changes in the condition of society.

The greatest divergence between the custom as held by our Civil Courts and the tribal opinion takes place in regard to interference with the natural order of succession to property in land. For instance, before our annexation of the Ludhiána district thirty years ago there was more than sufficient land for the wants of the agricultural population; and each proprietor had as much as he could cultivate or was willing to undertake the responsibility of, for under our predecessors the burdens attached to the possession of land were heavy. Every proprietor had to provide for the cultivation of his land and the payment of the Government revenue; and, if he happened to be old and childless, he had to get some one to assist him in the cultivation, or even to undertake the whole responsibility of proprietorship. His agnates had perhaps as much land as they could manage, and would decline to add more to it. Under these circumstances the proprietor naturally turned to his wife's relations, or to the family into which his sister or daughter had married; and brought in, with the tacit consent of the agnates, some one who would take the place of a son. The condition of things is now completely changed. The scarcity of land is, with the increase of population, making itself felt more and more, while property in land has acquired a clearly recognized and marketable value, which was quite unknown thirty years ago. The tribal feeling now is that a co-sharer in a village has but a life interest in his share of the land that he inherits, and that he should not be permitted to do anything that will injure the rights of the reversioners. If the agricultural population had their own way in the matter, they would undoubtedly establish something resembling a general law of entail; and, however objectionable restrictions on the power of a proprietor of land may be in principle, or when applied to large estates, I think that most officers who have a knowledge of what is now going on amongst the agricultural population would be inclined to agree with me in thinking that such a law could not but operate for the good of the mass of the peasantry. It is not necessary to pursue this subject further; and all that I have said is merely intended to illustrate the divergence between tribal feeling

as to what a custom should be, and the view that is apt to be taken by the Civil Courts.

338. The method usually employed for seeking the proof of a cus-

In investigating a custom one should not look merely to instances, which may be exceptions, but to the expression of the *tribal feeling*.

tom appears to me to be founded on a confusion of ideas. Two parties come into court in a dispute relating, say, to the succession of a daughter's son in preference to collaterals. The burden of proving the existence in a certain tribe or *got* of a custom by which the daughter's son succeeds in preference to the agnates, which is certainly treated by the Courts as a departure from the natural and ordinary law of inheritance, is on the party alleging it; and he is able to point to 12 or 20 instances in which the succession has gone in this way. But suppose that before the dispute arose the whole tribe were assembled and questioned on this point. The answer would almost certainly be that the instances quoted were mere exceptions to the rule of the tribe, and had no effect, probably because the succession had taken place with the consent of the agnates. I do not refer here to decisions of the Courts, where the point was actually disputed, because the validity of such decisions is really the question that I am now considering. On the other side of the case, what proof of the *absence* of a custom can be produced by the party denying it? It may be known that in hundreds of instances a daughter's son did not succeed, or a proprietor did not make a gift of his land, because this was recognized as contrary to the custom of the tribe. But how are such instances to be proved? The best evidence against the existence of a custom should be recognized as consisting in the denial by the leading men of the tribe or *got* of such a custom, and the repudiation of the instances quoted in support of it as exceptions.

339. I venture to hope that, where a really good Code of Tribal

Value of the Tribal Codes now attested.

Customs has been drawn up after careful attestation, it will be found to supply the Civil Courts with a clear statement of what is recognized by each tribe or *got* as the rule on most points that are likely to arise. If a custom has been recorded as admitted by the representatives of a tribe, or if it is denied, the instances of its existence being repudiated or exceptions, there should be the strongest presumption in favour of such a statement of the custom—a presumption not to be overcome otherwise than by overwhelming evidence that the statement is wrong. It should always be open to show that a decision of a Court on any such point was wrong, for I think I may say that such decisions (I speak, of course, of those by the subordinate Courts) are too often founded on insufficient data, and to follow them blindly, because they are decisions, would be to build up a custom on absolutely no foundation, every fresh decision, though wrong in itself, being taken as additional evidence of the existence of the rule. The evidence of a custom is

too often looked for in the District Record Office only, the last place in my opinion to which resort should be had.

340. Of the manner in which customs alter to keep pace with the changing conditions of society instances will be found everywhere in the Codes. Thus Instances of customs altering with the progress of society. the disintegration of the family, the substitution for it of the individual, and the breaking down of the paternal authority will be seen from such facts as the disappearance of the custom of "Chunda vand" succession, where the wives, and not the sons, were the units. In the matter of marriage, too, it is certain that the liberty of a grown-up woman, or, at all events of a widow, to contract herself will be in time established, for I do not suppose that the Courts would hold that the marriage of a widow celebrated with the usual ceremonies would be invalid, or the offspring of such a union illegitimate, because the consent of the deceased husband's heirs had not been obtained; but before our rule began such independence on the part of a woman could not have been imagined.

341. There are other points on which much might be written, Neglect of the Mahomedan and Hindu law. such for example as the complete supersession of the Mahomedan law wherever land is concerned. The Mahomedan land-owners, with the exception of the Awáns, are all converts from the Hindu religion; and even amongst the Awáns no attention is paid to the rules of inheritance prescribed by the *Sharah*, where the succession is to land. The Hindu law is equally neglected, and the soil appears to impose its own laws on all classes alike.

342. It will be seen that no clear distinction is maintained in the Codes between ancestral and acquired property. An agriculturist has a right to do what he chooses with moveable property of all sorts; but the limit to his power of disposal extends to all immoveables. In truth, the idea of acquiring landed property otherwise than by a grant of waste or by inheritance is entirely a growth of our rule, really of the last 15 or 20 years. The acquisition of land by purchase is now not uncommon, amongst the Jats at all events; but no distinction between this and inherited property in land is recognized, and the rules of succession, restriction on alienation, &c., would apparently apply to both alike. The idea, perhaps, is that such property is acquired by means of the ancestral property; but, at all events, the answers to the questions showed no tendency to exclude it from the accepted tribal rules.

343. I do not give an abstract of the Tribal Custom, because I hope that the Analysis will be found sufficiently condensed for all purposes; and an abstract would be merely a repetition of what will be found in the following paragraphs.

ANALYSIS OF THE CODES OF TRIBAL CUSTOM.

SECTION I.—FAMILY AND TRIBAL CONNECTION.

344. *Question 1.*—Are any persons considered to be relations (*wárisán*) besides those who are descended from a common ancestor? Are any of the wife's kindred considered to be relations (*wárisán*) of (1) the husband, (2) the husband's relatives or children?

Who are termed relations (*wárisán*) besides the agnates: the wife's kindred?

All tribes are agreed that only agnates are included in the term (*wárisán*), and that none of the wife's kindred are to be so designated, this answer being of course suggested by the word *wáris*, which was used in the question and really means "heirs." A man's own relations and those of his wife are called *sák*, which word includes both relations and connections by marriage; and relationship is *sakíri*. A wife's relations are specially known as *saore*; and I need not detail the several particular names of them, which will be found in any dictionary. This first question is a general one, not intended to elicit a statement of any custom; but I would note that Mahomedans and Hindus alike repudiated the idea of a wife's relations having any sort of status in her husband's family.

345. *Question 2.*—Explain your system of reckoning generations. The system of reckoning generations. By how many generations are the following persons said to be related to the person whose relatives are to be reckoned? (1) Brother, &c.

The reckoning is everywhere by generations as distinguished from degrees; but the matter is of no practical importance in connection with the devolution of property. In keeping the *sutak*, or time of purification, it is usual amongst Hindus to include as relations those descended from a common ancestor up to a certain generation. Some of the answers gave a method of calculation similar to that noted by Mr. Wilson in *Sírsa*, reckoning the number of generations back to the common ancestor. Thus an uncle or a grand-uncle and all his descendants are in a sense said to be in the same degree of relationship; but I think that this was an invention made to suit the question. Brother, cousin, &c., are generally spoken of as in the same generation; father, uncle, son, nephew, as in the second; grandfather, grand-uncle, grandson, &c., as in the third. The remaining questions of this Section in "Punjab Customary Law," Vol. III, are intended to elicit answers descriptive of the constitution of the family and of the tribe; and information on these points will be found in sufficient detail, I trust, in the previous chapters of the Report.

SECTION II.—BETROTHAL.

The age at which betrothal takes place.

346. *Question 3.*—At what age can betrothal take place?

Betrothal can take place at any age—the answer given by all tribes. A betrothal is an alliance between two families. In the pure form (*pun*), in which there is no money consideration, the ceremony takes place

when the parties are not more than five or six years of age, and the same is the case when an exchange (*vata sata*) of betrothal is effected. Where money is paid the parties, especially amongst the Jats, are often much older; and, where they are grown up, marriage follows very shortly after betrothal.

347. *Question 4.—Who has the power of making the contract of*

Who has the power of *betrothal*, and whose consent is necessary? Is betrothal, *that of the parties required?*

The consent of the parents or, if the father is dead, of the guardian, is necessary in all cases on the side of the girl; and also on that of the boy if he is a minor. If the boy is of age, he can contract a betrothal, whether his father is alive or not. Perhaps the original custom should be stated more strictly than this by saying that the betrothal is arranged between the *families* on both sides. But, as the family breaks up and the paternal authority loses its force, the son would assert his right of acting for himself when of age. One or two cases were quoted amongst the Rájputs and other Mahomedan tribes in which a grown-up girl had contracted a marriage without consent of her parents. Of course such action was not admitted as lawful by the representatives of the tribes; but, if the marriage ceremony had been duly performed by a priest and consummation had followed, I do not think that a Court of Law could undo it. The right of guardianship in the matter of betrothal will be found discussed under question No. 26.

348. *Question 5.—Describe the formalities observed on the*

Formalities of betrothal: *occasion of a betrothal. By what formality*
Hindu Jats: *pun* contracts. *does the contract become binding?*

In paragraphs 77—79 some account has been given of the ceremonies attending betrothal. Where amongst the Hindu Jats the betrothal is *pun*, or without consideration (the only pure form including the *vatta satta* or reciprocation of betrothal), action is taken by the *girl's* parents, who search for a suitable match. On finding one they send their *lágis*, or go-betweens, generally the priest (*parohit*) and barber (*naie*), sometimes with others (*jhínvar*, &c.) when the family is one of position, bearing presents to the house of the family selected. The presents consist of a sum of money (varying from 1 to 21 *mohars*), sugar or dates (*misri*, *chuhára*, &c.) from 5½ to 11 seers (*kacha* weight). When the *lágis* arrive at the boy's house his relations and the neighbours are called together, the boy is seated on a chair, and the money and sweets are put into his lap by the *lágis*, and a little of the latter into his mouth (all such presents are called *shagan* or "of good omen"). The boy then salutes the assembled people; and after that his parents divide sugar amongst them. The father of the boy presents some money to the *lágis* to be taken back to the *girl's* parents—no amount is specified, but it may be rupees or *mohars*. The *lágis* take of this as much as they have been told by the *girl's* parents to accept, generally one or two rupees only, returning the rest. The *lágis* also get something for themselves; and then return to the *girl's* parents.

The Garewáls and other high *gots* of Hindu Jats profess to regard the taking of a consideration for a girl as a sin; but there are not many families in any of the *gots* that refrain from doing it now-a-days. Where money is taken the girl is the commodity to be sold; and the *boy's* people begin. No *lágis* are sent by them; but the boy's father or some near relation with one or two others go to the girl's house and a bargain is struck. The price is said to have been in former times Rs. 40 at the time of betrothal, and Rs. 80 afterwards, at the time of marriage; but as much as Rs. 500 is not at all an uncommon price now. When the bargain has been struck the girl's parents send their *lágis*, or generally one man (*naie*), to the boy's house, and ceremonies similar to those described above are performed.

The Lobáuas and Sainis have similar ceremonies to the Jats; and their betrothals are almost invariably for money. It is said that the boy's people must send after the ceremony a present of clothes and jewelry to the girl.

The ceremonies observed by all Rájputs, Hindu and Mahomedan, are the same, and differ but little from those of the Hindu Jats, except that money is never taken in this tribe for a betrothal. The girl's people send to the boy's a present of a few rupees, a ring, clothes and sweets in charge of the *lágis*, who are generally three or four in number, a *Brahmin* (*parohit*), *naie*, *mirási*, *jhínwar*, *chamúr*. The employment of the Brahmin by the Mahomedan Rájputs is remarkable; and also the use of the ring, which we find, too, amongst the Sainis. When the *lágis* reach the boy's house the same ceremonies are performed as in the case of the Hindu Jats, the ring being put on the boy's finger, the clothes and money into his lap, and some sweets into his mouth, in the presence of his relations and the neighbours. The Qázi is sometimes called to give greater formality, and the *ijáb qabúl* is asked and answered.

Amongst the Mahomedan Jats the ceremonies described above are performed when the parties have made up their minds for the betrothal; the *naie* of the girl's people comes to the boy's house with one rupee and sugar, and presents them to him in the presence of the relations and friends, sometimes staining his hands with *mahndi*. The people assembled are fed with sweets, and a present is sometimes sent back to the girl's house. The Rájputs and Jats, being converts, have retained their Hindu customs almost in their entirety.

Amongst the Mahomedan Gujars, Araiens and Dogars, the father and a few relations, or the relations alone, go to the girl's house, an arrangement having been made beforehand, and give presents of sweets, clothes, &c., for her. The Qázi is called, and the *ijáb qabúl* asked and answered by the parties making the contract. The boy's relations are fed and dismissed, usually with a present of clothes (*khes*, &c.) On their arrival at their own home they distribute sugar to their relations in

token of the betrothal. Amongst the Awáns it is the custom for the boy's people to go to the girl's house. The betrothal is agreed to, and in token of it the girl's people give a piece of cloth (called *reza*) to the boy's, who distribute a small sum amongst the *lágis* of the girl's people; and on their return to their own village divide sugar amongst their friends. The priest is not called.

As to the question of which of the ceremonies make the betrothal

By what formality does the betrothal become binding. contract binding, it may be said that in the case of the Hindu Jats the betrothal is completed when the sweets and other presents brought from the girl's house are handed over to the boy before his relations by the *lágis* of the girl's people. Where the boy's people go to the girl's house they merely strike the bargain and pay some of the price. The *lágis* of the girl then go, as in the other case, to the house of the boy and complete the betrothal by the usual ceremonies. The payment of part of the price agreed, where a consideration is taken, would only complete the agreement to betroth, not the betrothal. Amongst the other tribes, too, no particular part of the ceremony appears to be essential, like walking round the sacred fire in the Hindu marriage. The formalities observed in a betrothal are merely the expression of an agreement between the two families and the announcement of this to the world, and religion has no part in them.

349. Question 6.—*Is a man who has contracted a betrothal*

Priority in betrothal entitling to priority of marriage. *entitled to marry another wife before he marries her to whom he was first betrothed; or does priority in betrothal entitle the girl to priority in marriage?*

All tribes except the Mahomedan Rájputs of Jagraón, who are of the *Manj got*, are agreed that priority of betrothal entitles to priority of marriage; and that, if the boy is married to another girl first, the girl's parents have the option of breaking off the betrothal; but amongst all the Hindu tribes, where a brother or a cousin has left a widow, the boy may marry her by the *karewa* form of marriage in order "to preserve the honor of the family," without prejudice to his right in regard of the girl betrothed to him. The custom of *karewa* will be discussed later, and it will be seen that a woman by marriage virtually becomes the property of the family into which she goes; and it is recognized that, when she becomes a widow, some arrangement must of necessity be made to get her another husband in it.

350. Question 7.—*For what reasons can a*

Reasons for which a betrothal may be annulled. *betrothal be annulled? Is impotence or immorality (bad chalaní) a sufficient ground for breaking off?*

The following are recognized by all tribes as sufficient reasons for breaking off a betrothal—leprosy, impotence, madness, blindness, becoming of *faqír*, change of religion, immorality on the part of the girl. If the boy be of age he can refuse to complete the marriage;

but this would really be letting the girl's people off. If the boy or girl turn out to be of a low caste, it appears that the contract could be annulled. The inquiry on this point was not made from all tribes; but, if either party had made a misrepresentation on this subject, I do not think that proof of a custom would be necessary. All tribes are agreed that the above reasons are sufficient for breaking off a betrothal, and many instances of each cause were given. It would not appear that the bodily infirmity must necessarily have developed after the betrothal, though I suppose that, if it were proved that the party had full knowledge of the infirmity to which it afterwards objected, the reason would not be considered sufficient by a Court of Law. The Jats appear to consider it the proper thing, in the case of the boy dying or becoming physically unfit, that the girl should, if possible, be married to his brother, *i.e.* inside the family; but there is nothing resembling a positive custom that could be enforced, only a *feeling*, which will be found to have its origin in most cases in the fact of money having been paid for the girl.

351. *Question 8.—If the betrothal be annulled at the instance of one party is that party liable for the expenses, &c., or not?*
 What may be recovered on account of breach of betrothal.

As pointed out before the advantages derived from the betrothal are all on the boy's side, and all tribes agree that an action for breach of the contract would lie as a matter of course where the girl's people broke off without sufficient cause. A few tribes or groups also recorded the view that damages would be recovered by the girl's family from the boy's for a breach without good reason; but instances to support this are not given, and it is said that the girl's people would not think of suing. The question of damages is after all scarcely one to be decided by custom, which can define what constitutes a proper contract of betrothal, and the grounds on which such contract can be annulled by either party. Suits on the part of the girl's people are unknown; but that would not prevent a Court of Law from considering whether in any particular case they were entitled to damages.

The question (No. 6) in Vol. III of "Punjab Customary Law" as to the repayment of expenses in case of a breach for good reason was not asked; as this, too, is a point rather of positive law than of custom.

SECTION III.—MARRIAGE.

352. *Question 9.—Within what degrees of relationship is marriage lawful?*
 Degrees of relationship prohibited for marriag

Amongst all the Hindu tribes (Jat, Saini, Lobána, Rájput) marriage with a girl belonging to the usual four *gots* is prohibited—(1) the boy's own, (2) his mother's, (3) his father's mother's, and (4) his mother's

mother's. Amongst Mahomedans a man may not marry within the degrees forbidden by Mahomedan law (fourteen in number), which I need not enumerate.

353. *Question 10.—What physical defects are sufficient for annulment of marriage? Are idiocy or lunacy,*

Physical defects annulling a marriage.

impotence or mutilation, sufficient causes?

Is any distinction made if the party seeking annulment knew of the defect at the time of marriage or if the defect have arisen subsequently?

The Rájputs (Hindu and Mahomedan) and Hindu Jats of the Garewál got say that a marriage cannot be annulled for any of these reasons; and no instances of annulment amongst them are forthcoming. It must be remembered that the indissoluble nature of the contract and the general strictness in the matter of marriage are what the Rájputs rely on to maintain their purity of descent; and the Garewáls, too, being of the highest standing amongst Jats, and calling themselves Rájputs in origin, try to prevent any laxness. Amongst the other tribes lunacy or idiocy, leprosy, mutilation are agreed to be good grounds for annulment; and instances are given to show this from all sections and localities. No other defects are admitted, although the word *impotence* appears in some of the answers, by mistake I should think, as a case of annulment for this cause has never occurred as far as I can learn. The Hindu Jats generally think, as might be expected, that the woman, when freed from her husband for any of the above causes, must continue in the family, and marry his brother, &c. by *karewa*; but I do not think that there is anything amounting to a custom that could be enforced on this point; or that the Courts would declare void her marriage to a stranger.

354. *Question 11.—Between what tribes is marriage lawful, and between people of what religions? Is there any other cause invalidating a marriage?*

Marriage outside of the tribe or religion.

All Hindus state that a man may marry a virgin of his own tribe (*qaum*) only; but in a *karewa* marriage many sections say that a widow of any other Hindu tribe may be taken. Hindu Rájputs and Mahomedan Rájputs, Dogars, Araiens say that any marriage out of the tribe is unlawful. The Awáns, who go more by the Mahomedan law than any other tribe, and the Mahomedan Gujars, record that one of them may marry any woman of their own religion. Many instances are given of Hindu Jats marrying widows of other Hindu tribes and the offspring being considered legitimate. This is another of the points on which the strictness of the old custom is not likely to withstand long the inroads made by the progress of society. I very much doubt if, even amongst the Rájputs, the offspring of a marriage, otherwise properly contracted, with a woman not belonging to the tribe would be considered by the Courts not entitled to inherit. At

present the fear of exclusion from the brotherhood appears to be a sufficient deterrent from such unions, but it is improbable that this will retain its force for ever. However long the social punishment will continue to be a restraint amongst other tribes and sections of the Hindu Jats, I do not think that the Courts could even now declare such offspring to be illegitimate.

355. *Question 12.—May a man marry his wife's sister during the lifetime of the former; and with what relations of his wife is marriage unlawful?*

Relations of the wife with whom marriage is prohibited.

A man may marry his wife's sister whether the former is alive or dead; but he may not marry his wife's (1) mother's sister, (2) father's sister, (3) sister's daughter, (4) brother's daughter, and, of course, wife's mother (all Hindus). All the Mahomedan tribes are bound by the Mahomedan law on this point; and a man may not marry his wife's sister so long as the former is alive, nor may he marry any of her near relations. But, when the wife dies, the connection with the family is considered as broken; and a man may certainly marry the sister, and apparently any of the other near relations.

Re-marriage with a divorced wife.

356. *Question 13.—When a man has divorced his wife can he re-marry her?*

If a Hindu has turned his wife out of doors for immorality, he may take her back as his wife, unless she has changed her religion; but there is no recognized form of divorce amongst Hindus.

The Mahomedan tribes are bound by the Mahomedan law, which the village Qāzi interprets to them; but in the Mahomedan Rājput tribe a divorced woman is never taken back.

357. *Question 14.—Are the degrees prohibited by consanguinity prohibited also by fosterage?*

Fosterage.

A man may not marry his foster mother, or any one descended from her (all tribes). This is the only restriction.

Number of wives.

358. *Question 15.—How many wives are allowed?*

Amongst Hindus there is no legal limit to the number of wives, except that it is said to be unlawful for Lobána to have more than four; and this is the number fixed by Mahomedan law for all Mahomedans. An ordinary Hindu Jat could not afford a second wife; and it is not usual to take one, unless a brother's widow, or where the man is pretty well off and has no male offspring by his first wife. Well-to-do Jats, Sardárs and men of good family, very generally marry two or three wives.

Age at which marriage takes place.

359. *Question 16.—At what age does marriage take place?*

Marriage takes place at any age between 5 and 20; but there is no restriction to even these limits. In good Hindu families infant marriages are more common than amongst the ordinary agricultural

population; but I have known cases of Rájputs keeping their daughters till even 30 years of age because a suitable match could not be found. Where the girl has not attained the age of puberty she remains in her parent's house after marriage till she does so, and then made over to her husband's people (*mukláwa*). Amongst ordinary agriculturists the girl is generally of a good age when married, and the *mukláwa* follows soon after marriage. The question was not raised of whether a *mukláwa* could be forced before the girl had attained the age of puberty; but I should think that a Court would refuse, on grounds of morality, to make her over to her husband before she had reached this.

360. *Question 17.—Whose consent is necessary to the validity of marriage—(1) when both parties are under age; (2) when either is of age? Can a woman contract a legal marriage without the consent of her guardian?*

Whose consent is necessary for a valid marriage.

This question relates to first marriages only; and all tribes are agreed that a girl cannot contract a lawful marriage without the consent of her guardians, whether she be grown up or not. The only dissent was by one of the Awáns, who gave instances in which grown-up girls had contracted marriages which were upheld by the Courts. Custom notwithstanding, I think that we are bound to come to this that a marriage with a grown-up girl, celebrated and consummated, must be recognized by the Courts. Where the boy is of age he can contract a valid marriage, as he can a betrothal, of his own accord.

361. *Question 18.—With what ceremonies is a marriage celebrated and what ceremony makes the union binding?*

Ceremonies of marriage; which of them makes the union binding.

In paragraphs 78 and 79 I have given a brief account of the ceremonies observed by Hindus and Mahomedans, and I need not repeat it here. It is the *phera*, or walking together round the fire, while the Brahmin repeats the marriage *mantars* that constitutes the actual ceremony in a Hindu marriage (with a virgin), the other observances being merely part of the wedding celebration. Amongst Mahomedans the marriage is celebrated according to Mahomedan law by the priest; and the reading of the *nikah*, or service, makes the marriage binding. Of the whole question of *karewa*, or widow marriages, an account will be found further on in this section (Question 24).

362. *Question 19.—Upon what grounds may a woman be divorced? Is change of religion a sufficient reason? May a husband divorce his wife without assigning any cause?*

Grounds on which a woman may be divorced.

A Hindu may turn his wife out of doors for immorality or change of religion, but for no other reason; and, if he does so, she ceases to be his wife. A Hindu marriage is nominally indissoluble, and there is,

therefore, no recognized form of divorce. Some of the Hindu Jats said that a man should have witnesses when he expels his wife. The Mahomedans follow the Mahomedan law on this point; and a woman may nominally be divorced without cause assigned, subject to the payment of the dower (*mehr*). Amongst Mahomedan Rājputs a woman divorced without cause is said to be entitled to maintenance; but no instances of this are given, and all tribes agree in reprobating such a divorce. Public opinion prevents the strict Mahomedan law from producing hardship in this respect.

363. Question 20.—*What are the formalities attending divorce?*

Formalities of divorce.

Is there any distinction between talāq and khula?

Divorce is given by Mahomedans according to the Mahomedan law, and *khula* appears to be unknown amongst the common people. As to Hindus, the answer has been given under the preceding question.

364. Question 21.—*Has the divorced wife*

Claim of the divorced wife
against her husband.

*any claim against her husband for maintenance?
If she be divorced for adultery?*

The answer to this has already been given under No. 19. A Hindu woman, unless turned out for adultery or change of religion, would have a claim against her husband for maintenance, unless, of course, she married some one else. Mahomedans appear to follow the Mahomedan law in this point; and the divorced woman is entitled to her dower. There is some disagreement as to whether the woman gets her dower when divorced for good reason; but I should think that the Mahomedan law would decide in this, as it does in other matters not connected with property in land. At all events there is nothing of the nature of a tribal or local custom on the point. If a dispute should arise it would be decided by reference to the village priest (*mullah*); or, if the parties resorted to the Civil Courts, according to recognized interpretation of the Mahomedan law.

Divorce by the wife.

365. Question 22.—*On what grounds has the wife right to claim release from the marriage tie?*

See question 10. Change of religion or the bodily infirmities or injuries mentioned there are good grounds; but the Rājputs say that a woman cannot be released for any reason.

366. Question 23.—*What is dower and when does it become due?*

Dower.

When the marriage is celebrated or on the death of the husband or on divorce? If the wife is divorced for adultery is she entitled to dower?

Dower (*mehr*) is known amongst the Mahomedans only. By the Law (*Sharah*) the amount of dower is Rs. 32-4; but a higher sum may be fixed. The recorded custom as to payment varies slightly in the various tribes; but as a fact the claim is almost invariably given up

by the woman (*hibadana*). If a dispute arose, the parties would agree to abide by the Mahomedan law; but a dispute is likely to arise only in the event of a divorce, which is an unusual occurrence. It has generally been recorded that half of the dower (*prompt*) is due at the time of marriage, and the rest may be demanded at any time; but both are usually given up by the wife at the time of marriage. In this matter of dower also there is no local or tribal custom; nor, from the nature of the subject, was one to be expected.

Karewa or widow marriage.

367. Question 24.—Describe the customs of *karewa*, *chádár dálua*, &c. What is the difference between such marriages and those of the ordinary kind?

The Hindus call the re-marriage of a widow *karewa* (the ceremony being *chádár dálua*); and it is practised by all the agricultural tribes except the Rájputs. There is, of course, no betrothal; and the ceremony is of the simplest description. The *phera* is not performed; but the *páda*, or priest, worships the *chaunk* as in a first marriage, the parties being seated side by side in the presence of the relations and neighbours. The priest makes the parties' heads touch, ties some part of their clothes together by a knot, and places a *chádár* over them both. Sweets (*gur*, *shakar*, &c.) are distributed amongst those present in honour of the event.

I have already remarked that a betrothal is really a contract between two families; and that, when money is paid for a girl, she becomes in a way the property (*haq*) of the family into which she has been betrothed. Where she has been actually married there is a still stronger feeling that she belongs to the family of her husband, whether the *mukláwa* or making over has actually taken place or not. A brother or a first cousin of the deceased would, if the girl were still in her parent's house, take the *mukláwa* as a matter of course, for she has ceased to belong to her father's family. Where the girl is under age there would be no question of her consent, and she would probably be remarried by her parents to the person selected by the other family. Where she is of full age, all the Hindu tribes agree that she cannot be forced to marry her husband's brother or cousin, and has the option of remaining a widow in his family; but, if she marries any one, it should be the brother or, failing him, some other member of the family. It is considered a great dishonour, apart from the pecuniary loss, for a widow to marry into a strange family; but as to how far this can be said to be a custom which the Courts should enforce, it is not necessary for me to hazard an opinion. The tribal feeling is very strongly in favour of maintaining the power of the husband's family over the action of the widow in this matter; while our Courts could scarcely refuse to recognize as valid a marriage contracted by a widow who was not a minor, although it had not the sanction of her husband's relations.

Of Mahomedans, the Rájputs do not allow remarriage of a widow or divorced woman; and the man who contracts such a marriage

would be put out of caste. But the marriage, if celebrated according to the Mahomedan service, would apparently be a perfectly valid one, for, as in the case of marriage out of the tribe, there are no consequences beyond the social punishment. Amongst all the other Mahomedan tribes widow marriages are practised, and the widow does not apparently require anyone's consent if she is of age. There is no distinction between the service on a first and a second marriage; but the *barát*, or bridal procession, and other celebrations are omitted in the latter. Amongst the Mahomedan Gujars if the husband has left a brother, and the widow marries some other person, the man she marries must pay to the first husband's family a fine of Rs. 150 to 200, or give a girl in marriage (*náta*). This custom has been recognized by the Courts. In the other Mahomedan tribes it is usual for the widow to marry a brother or near relation of the deceased husband; but there does not appear to be a positive custom on the point.

368. Question 25.—Where the marriage ceremony has not been performed does the cohabitation of a man and woman constitute a valid marriage?

Can mere cohabitation constitute a valid marriage.

Amongst all Mahomedan tribes the *nikah* or marriage service is necessary for a legitimate marriage. Amongst the Hindus there is a daily increasing laxity in the matter of the widow marriage, as I have noticed in paragraph 78 of the Report; and I am inclined to think that in all the Hindu agricultural tribes (except the Rájputs) cohabitation, or living together as man and wife without any ceremony, would constitute a legitimate marriage, so far as the issue of such a union is concerned. Such cohabitation is still openly reprobated, just as the taking of money for a girl is; and under native rule the omission of the ceremony was (and still is, I believe) punished with a fine, perhaps in the interest of the priestly class: but very few of the tribes or *gots* would go the length of saying that the issue of such a union would be illegitimate. When the husband dies, the widow may take her place in the house of one of the brothers (*dewar* or *jet*) as a *wife of the brother* without any ceremony; or, in the case of the marriage, but not the *mukláwa*, having taken place, the brother may go and bring the widow home in the same manner as the deceased would have done. The only section of the Hindu agriculturists who dissented from these conclusions were the Garewál Jats, two sets of Jats of miscellaneous *gots* in Samrála, and the Lobánas. Some others recorded that, unless in the case of the husband's brother, the ceremony was necessary. But I doubt if these statements would have any great effect than an expression of the *feeling* of the tribe or *got*. In the case of the Garewál Jats and the Lobánas, living with a woman not united by the *chádar dálna* ceremony would probably put the man out of caste (*barádari se khárij*); but I do not think that even here the status of the offspring would be affected by the omission of such a very loose ceremony. Among the Jats generally, if a man takes a woman to live with him as his wife, even if she is of another tribe, the offspring would apparently be legitimate; and this has been recognized by the Courts in many cases.

SECTION IV.—GUARDIANSHIP AND MINORITY.

369. *Question 26.—Upon whom does the guardianship of a minor devolve where there are a brother and a mother?*

Who is entitled to the guardianship of a minor; the control of the land and the power of betrothal?

And if there is neither, who has the right of betrothing a female minor?

Amongst the Hindus the mother is in all cases (except if she be unchaste, some *gots* of Jats have added) entitled to the guardianship of the person of the minor on the death of the father. If a family be joint, a brother or brothers of deceased living with the mother and the minor son, the former are entitled to the management of the minor's property; but, if the father was separated from his brothers (in property), the mother has the right of management also. If neither brother nor mother survive, the nearest agnate is the guardian. The mother cannot betroth a daughter without the consent of the nearest relations of the father; and some of the *gots* of Jats give the people who have the power of betrothal in this order—grandfather (deceased's father), brother, uncle, and after this the nearest of kin if related within seven generations. In this matter, however, there cannot be said to be any certainty. The relations of the father are most likely to agree amongst themselves in the matter; and the only dispute that could well arise is as to the mother's right to betroth the girl. On this point all Hindus agree that she must have the sanction of her husband's relations. The Mahomedan agricultural tribes follow the Hindus in this point. In one case between Mahomedan Jats a betrothal contract made by the mother contrary to the wishes of the agnates was supported by the Courts; but the decision was not accepted by the tribe, and the instance is a solitary one.

There are two points of importance in this matter of guardianship: (1) the management of the property, *i.e.* the land, of the minor; (2) the right of betrothing the minor if a girl. The guardianship of the person of the minor is not considered of such consequence apart from these rights; and, as the betrothal of a boy is a *liability*, no claim could be made in respect of it. As to (1) there is the same strong feeling about the guardianship as there is about the right of the childless widow in the land (Questions 39—42); and in fact the position of the widow is virtually the same in both cases. The woman is a stranger to the family, belonging to a different *got* and village; and it is taken for granted (with very good reason) that she will be under the influence of her own relations; so that her guardianship or possession of the property means that of her brothers or other relations, and the introduction of strangers. Where the deceased was living apart from his brothers, &c., the right of the widow, whether she have children or not, cannot be denied; but there is the strongest feeling that she must be subject to the influence and control of her husband's agnates.

370. *Question 27.—To what extent, under what conditions,*

Powers of the guardian over the property of the minor.

and for what purposes, can guardians alienate the property of their wards by sale, gift or mortgage?

The right to alienate moveable property for the necessary expenses of the ward is admitted by all tribes, provided that the near agnates, on being asked to do so, refuse to supply the funds. In respect of immoveable property (that is land) the answers recorded do not agree; and show that, although the people are clear as to what they should like to have declared the rule, a regular custom cannot be said to be established. The answers are almost entirely directed against the power of the widow (for, if she is not the sole guardian, some of the agnates would have the control, and no one would be in a position to question his right); and they are due to the feeling, which I have referred to under the previous question, that she must naturally be more subject to the influence of her own kin than of her husband's relations. Most tribes admit the right of temporary alienation in order to raise money for necessary expenses, if the near relation of the father refuse to meet them, the only objectors to this being a few of the Jats (of Samrála) and the Araiens of Ludhiána. The power of sale is admitted by the same tribe in parts of the District and denied by it in others; and instances of sale are not forthcoming (only one is quoted). Necessaries are defined by the people as marriage and funeral expenses, debts of the father, payment of Government revenue, suitable maintenance of the minor.

On the whole, I think that the custom might be formulated as follows: That the father's relations should provide the funds for the *necessary* expenses of the minor; but, on their refusal or neglect to do so, the guardian has the power of absolutely alienating moveable property, and of temporarily alienating immoveable in order to raise enough money for this purpose. In the case (which may be considered almost impossible) of the guardian not being able to raise funds on the mortgage of the land, he would probably have the right to sell the whole or a portion of it. What the people desire to guard against is almost invariably a collusive alienation by the widow to some of her own people; and the strongest evidence should, I think, be required by a Court (1) of the necessity of the expenses; (2) of the refusal of the father's relations to supply the funds; and (3) of the *bona fides* of the guardian, which would be evidenced by the actual receipt of the money for the benefit of the minor. Further, as money can always be raised on mortgage, necessity for a permanent alienation could scarcely be proved.

Who is entitled to the custody of a married woman?

371. Question 28.—*Who is entitled to the custody of a married female whose father and husband are alive?*

Under the head of marriage reference has been made to the *mukláwa*, or making over of the girl, which usually takes place when she has attained the age of puberty; or, if she is of that age when married, within a few months of the marriage. As long as the girl remains in her parent's house, the guardian is the person who would be entitled to the guardianship if she were not married. When she is in her husband's house, he is the guardian, or his parents, &c., if he is a minor himself.

372. *Question 29.—If a widow, being the guardian of a minor child, remarry, will her guardianship cease? Will it revive on her becoming a widow again?*
 Effect of re-marriage of a widow who is guardian.

If she marry in her first husband's family (a brother, cousin, &c.) her right to guardianship remains; but she loses it altogether if she marries a stranger, and it cannot revive. If the child is an infant in arms, she retains it till it is able to leave her (all tribes).

373. *Question 30.—Is a minor, whose father is dead, and who has inherited his father's property, liable for his father's debts? for his father's debts?*
 Liability of a minor for his father's debts.

He is liable to the extent of the property inherited and no further (all tribes). This question and several others given in Vol. III of "Punjab Customary Law" which I have omitted, are on matters decided by positive law rather than by custom. For instance, I do not think that any Court would maintain a custom declared by a tribe to the effect that the heir could take all his father's property and repudiate his father's debts.

374. *Question 31.—Is a woman, whether minor or not, always under guardianship? Upon whom does the guardianship of (1) an unmarried, (2) a married female, successively devolve?*
 Is a woman always under tutelage?

The answer to this has already been given in several places. A woman is always under guardianship—if married, of her husband; if unmarried, of her parents, or of her natural guardians if she have no parents.

SECTION V.—SUCCESSION.

MALE LINEAL DESCENDANTS.

375. *Question 32.—If a man die leaving a widow or widows, son or sons, daughter or daughters, brothers or other relatives, upon whom will the inheritance devolve?*
 The order of succession where there are sons and widows.

The heirs to the property of the deceased are his male lineal descendants. If a man die leaving sons (or their sons), and widows, a sonless widow will take (a widow's right in) a share equal to that of each of the sons, and the widow with sons will live with them, no separate share being assigned to her. Thus a man leaves a widow with three sons and another with no son; the latter will have a life interest in one-fourth of the property, and the former will depend for maintenance on her sons. But, where the custom of *chunda vand* is observed, the property is divided into as many shares as there are widows, and each widow or her sons get one share. The Hindu Jats of Jagraon, the Awáns and Hindú Rájputs do not allow the childless widow more than maintenance, where there are sons of another wife. Daughters are entitled only to maintenance, and have no

status as heirs. In paragraph 341 I have already remarked how completely the Mahomedan law has been superseded in the matter of succession. There is really no difference between the customs of Hindus and of Mahomedans on most points.

376. Question 33.—*If there be more sons than one will they take equal shares? If not, upon what principle are the shares regulated?*
 Property how shared between sons; uterine descent (*pagrand* and *chunda vand*).
 (I) *is any regard had to uterine descent?*
 (II) *to the caste or tribe of the mother?*
 (III) *to the age of the sons?*

(I).—The almost universal custom is to neglect uterine descent, and that each son (or his representatives) should take an equal share, that is the *pagrand* custom prevails. The rule of *chunda vand*, under which the property was divided according to the number of wives, the descendants of each wife taking one share, is clearly a barbarous and unjust one, and is fast disappearing, the common sense of the people having declared against it. In early times, when land was plentiful and the paternal power was in full force, such a distribution was not likely to meet with much opposition; but now with the growing scarcity of land the right of every son to an equal share in his father's property is insisted on. This was the way in which most of the representatives of the tribes and *gots* put the matter to me when questioned. Even where cases were quoted of *chunda vand* succession, these were declared to be instances of an extinct and not of a living custom. Some whole villages of most tribes still declared for *chunda vand*; and their statements have been thus recorded. It is remarkable that on this point the representatives of each village agreed amongst themselves on one or other of the customs, and there was no dispute inside of any village. The custom of *chunda vand* can scarcely be said to be such a bad one that a Court of Law ought to reject it; but it may, I think, be held to be *prima facie* opposed to justice and equity. There is such a strong presumption in favor of the equal right of all a man's sons in his property, that the fullest evidence should be required to establish the contrary; and this is the view that the people themselves take.

(II) and (III).—No distinction is made on account of the tribe or caste of the mother, or of the age of the sons.

377. Question 34.—*Can a father in his lifetime nominate a particular son as "laig" beta, and would such a son get a larger share than his brothers after the death of the father?*
 No custom of preferring one son to the others.

A father can in his lifetime give one of his sons a larger share of his property than the others; but such an arrangement has no effect after the death of the father, and all sons are entitled to share alike.

Property acquired by sons in a joint family. 378. Question 35.—*When an estate has been held jointly by father and sons, and one*

of the sons has acquired property, is such property excluded from partition on the death of the father?

If the son have acquired separate property by gift or will, or from his wife's relations, such property is exempted from partition after the father's death, and remains the special property of that son. The dowry (*duhez* or *jahes*) received with a wife is also exempted. This may be taken as the general custom; but the Hindu Rājputs (Samrāla) say that no property, and the *Dhāliwāl* Jats (Ludhiāna), that only property received from the wife's parents is excluded from partition.

RIGHT OF REPRESENTATION.

379. *Question 36.—Where a deceased leaves sons and also sons of*

The right of representation in the case of sons and grandsons.

deceased sons, are the latter entitled to a share as well as the former?

All are entitled to participate, and sons do not exclude sons of deceased sons.

380. *Question 37.—Where a deceased leaves sons and also sons*

The succession in such cases is *per stirpes* not *per capita*.

of deceased sons, or only sons of deceased sons, do the grandsons divide equally, or are they any entitled to share in what their father would have received if he had been alive?

The division is *per stirpes* and not *per capita*, the property being divided into as many shares as there were sons, and each son, or the descendants of each son jointly, taking a share.

381. *Question 38.—When there are no male lineal descen-*

Representation in the case of collaterals.

dants (sons, grandsons or great grandsons), and brothers and nephews succeed, do they take their shares in the same manner, or how?

As above, the right of representation is fully recognized. Thus, if there are brothers and the sons of brothers, the number of shares corresponds to the number of brothers alive, or who have left male lineal descendants; and each brother and the lineal representatives of such brother get a share.

The result of these answers (36—38) is that the right of representation is recognized without any exception; and that the inheritance is *per stirpes*.

WIDOWS.

382. *Question 29.—If a man die leaving a widow and a*

Succession of the widow on failure of male issue.

daughter or daughters, brother or brothers' descendants, uncles or their descendants, &c., but no male lineal descendants, upon whom will the inheritance devolve?

Where the deceased has left no male lineal descendants the widow has a right in his property superior to that of daughters (or their children) and collaterals. Most tribes say that a son's widow (*nuh*) or widows take an equal share with those of the deceased, the exceptions being that amongst the Araiens of Ludhiána and the Dogars the deceased's widow is said to exclude the widow of the son, who, however, comes in after her. The Hindu Rájputs (Samrála) also have recorded that the *mother* of the deceased has first right; and instances are given in other tribes where the mother has succeeded along with the widow; but this statement is merely due to a confusion of terms, and what is meant is the same custom as above—that, when there is a widow of a son who predeceased his father, the mother of that son (that is the widow of the person whose property is in question) excludes the son's widow. Where the father has died before the son, the property has passed to the latter; and according to the answers to the previous questions the mother could have no rights; while on the son's death his widow would succeed. It is the exception for the widow of a predeceased son to share with her husband's mother, the general rule being that the latter excludes her.

The right of the widow to succeed to her husband's estate is a custom which may be said to be attached to the soil, and to supersede all law; and even the Awáns, who are the strictest observers of the *Sharah*, make no attempt to deny it. It will be seen that it is only to property in land that the agricultural tribes attach much importance, and the life interest of the widow in her husband's holding or share is most unwillingly admitted by the agnates, and her power over it strictly controlled. In this, as in other matters of succession to land, religion makes no difference, a man being a *zamindár* first and an observer of the *Sharah* or *Shástra* after.

383. Question 40.—What is the nature of the widow's interest where she succeeds? What rights of alienation has she?—

The nature of the interest taken by the widow.

(i.) Under what special circumstances, or for what special purposes can she alienate?

(ii.) Is any distinction made in this matter between moveable and immoveable, ancestral and acquired property, or in respect of alienation to the kindred of the deceased?

(i.) The widow has a life interest in her husband's estate, and she has no power of alienation except for proved and special necessity, such as payment of Government revenue, debts of deceased, marriage of daughter, or any other special purpose, and if the collaterals of deceased should have refused to provide the money.

(ii.) The collaterals have no power to interfere in the disposal of moveable property; but, as they have reversionary rights in all immoveable property, they may interfere if the widow attempts to do anything that would injure these. The representatives of one *got* of Hindu Jats say that a widow may make a gift (*pun*) of a small area of land (one or two *bíghas kacha*) to the Brahmans: but this need scarcely have been recorded, as no one would be likely to try to set

aside such a disposition once effected. The moveable property of the deceased is not, as I have observed, considered as of much importance; and the widow has apparently an absolute right of disposing of it. As a result of the increasing scarcity of land, and its transferability, which is fostered by our system, the idea is gaining strength in the agricultural mind that even a full proprietor of inherited land has but a limited interest in it; and it is natural that the much inferior right of the widow should be regarded with great jealousy.

No distinction between joint widows on account of family, &c.

384. *Question 41.—If there be several widows, do they take in equal shares? Is any distinction made in respect of the rights of widows who are not of the same tribe or family*

as the deceased?

All widows share alike except amongst the Garewál Jats, who say that a widow who is not a *Jatni* would be entitled to maintenance only; but this *got* would scarcely admit that such woman could legally be the wife of a Garewál.

The effects of unchastity or re-marriage on the right of the widow.

385. *Question 42.—What is the effect of unchastity or of re-marriage on the right of the widow?*

All tribes agree that unchastity and re-marriage (whether in the family or to a stranger apparently) equally destroy the right of the widow over her husband's estate; but some say that mere unchastity has not this effect, if the woman does not actually leave her husband's home (Lobána, Saini, Mahomedan Jats, and some of the Hindu Jats of Samrála and the Hindu Jats of pargana Ghungrána). I doubt if the Courts would ever recognize mere unchastity, of which sufficient evidence would always be difficult to obtain, as forfeiting the rights of the widow; and there certainly is no established custom on the point, nor is it likely to be raised. Re-marriage to a stranger would in all cases, I think, deprive the widow of her right; and so would a union with a member of her deceased husband's family.

DAUGHTERS.

386. *Question 43.—Under what circumstances can daughters inherit? If there are sons, widows or near collaterals, do they exclude the daughter? If the collaterals exclude her, is there any fixed limit of relationship within which such near*

Circumstances under which daughters can inherit.

kindred must stand?

If there is male lineal issue a daughter cannot generally succeed; and a widow also excludes her. An unmarried daughter is entitled to maintenance from her father's property, and he may provide for her out of it in his life-time. All the Mahomedan Rájputs, however,

Mahomedan Rájputs.

agree that, if there be a daughter who has taken a vow to remain single, she takes a

son's share, or, if there be no male lineal descendants, she succeeds to the whole estate; but the right ceases and the property returns to the heirs of deceased on her marriage or death. Many instances are given amongst the Mahomedan Rájputs of all three Tahsils in which a daughter has succeeded in this manner; and there can be no doubt about the custom. Where there are a widow and a virgin daughter, I think that the widow would succeed first; but the question was not put, and the case is not likely to arise.

Most of the Hindu Jats will admit the right of the daughter, virgin or married, to succeed under no circumstances, however far back it is necessary to go in order to find a collateral relation of the deceased. In fact it is said that, if there is any one in the *Thula* or *Patti* even, she would not succeed, as such a person would be presumed to be descended from the same ancestor as deceased. The other Hindu tribes follow the Jats in this matter, and so do the Araiens, except in Jagráon tahsil. The Mahomedan Jats, Mahomedan Rájputs and the Hindu Jats of one group in Ludhiána tahsil say that, if there is no male collateral related through the great-great-grandfather (*nakardáda*), the daughter, married or virgin, succeeds. The Awáns, Gujars, Lobáns and Dogars say that, if a married daughter have lived with her father from the day of marriage, never having left his house, she succeeds on failure of male lineal descendants, and her children after her apparently.

Rights of unmarried daughters, and of a married daughter living with her father; *ghar-jaraie*.

387. Question 41.—(i) *Under what circumstances are daughters entitled to maintenance out of the estate of a deceased father?*

(ii.) *What is the effect of marriage or residence in a strange village upon the right of the daughter to inherit or be maintained?*

(iii.) *If a married daughter and her husband live with the father till his decease can the daughter inherit?*

(i & ii). An unmarried daughter is entitled till her marriage to maintenance from the estate of her deceased father; and, if there be no male lineal descendants, she will retain possession of the whole estate until her marriage, when it will go to the collaterals. A widow daughter, if she lives in her father's village and her husband's property is not sufficient for her support, would be entitled to maintenance from her father's estate. Under the circumstances of (iii) the daughter and her husband have no rights over the immoveable property of the father, except in the case of the four tribes mentioned at the conclusion of the last paragraph; but they would generally be entitled to retain possession of moveable property.

The answers to these two last questions show that three Mahomedan tribes (Awán, Gujar and Dogar) and the Hindu Lobáns recognize in a way the custom of *ghar-jaraie*; but they say that it is the daughter that succeeds (as she does if there are no male lineal descendants) and not her husband. However, her children appear to get the property after her, and not the collaterals of her husband. (Also

see under Question 71 as to *ghar-jawaie*.) No other tribe admits the right of the daughter or her husband to succeed to immoveable property, if there are collaterals within a recognizable degree of relationship.

388. Question 45.—*What is the nature of the daughter's interest in property that she inherits? Define her rights of alienation by sale, gift, mortgage.*

Nature of the daughter's interest.

The answers to this question by the four tribes, who admit the right of the daughter living with her father, are not very clear. They say (except the Lobánas) that she has the same right as the widow, and that she is subject to the control of her father's relatives. This probably is the case when she has no children; but, if she has sons, they would succeed (there are many instances of their being in possession now), and the property would be permanently alienated from the father's family. The Lobánas are consistent, and say that the daughter is the absolute proprietor of land inherited in this way. The other tribes, of course, admit no right of the daughter, except that some do in the case of there being no collaterals within a long distance.

389. Question 46 (a). *If there are sons of deceased daughters, do they succeed and how do they divide? According to the number of daughter's sons or according to the number of daughters (per stirpes or per capita)?*

Representation through daughters; succession to them.

(b). *If the daughter die without male issue, who succeeds? her father's kin or her husband's?*

Where the daughter succeeds under the circumstances of Questions 43 and 44 (in four tribes), her sons and grandsons would succeed her; but, if she die without male issue, the property would apparently return to her father's relations. As only one daughter would remain with her father and inherit, the question of representation does not arise.

PARENTS.

390. Question 47.—*If a man dies without male lineal descendants, and leaving no widow, daughter or descendants through a daughter, who is entitled to succeed?*

Succession of parents.

A son could only under exceptional circumstances, e.g., by gift, or where his father had separated him off a share in the family estate, be in possession of property during the lifetime of his father; and, if he dies, the father would have the first right, and after him the mother. Then come the brothers and their male lineal descendants, and the other collaterals in order of relationship.

391. *Question 48.*—*When the estate devolves on the mother of the deceased, what is the nature of the interest that she acquires? What are her powers of alienation? On her death do her son's kin or her own succeed?*

The mother has exactly the same rights as the widow (Question No. 40); and on her death her son's kin succeed, her own kin having no rights in respect of such property.

BROTHERS.

392. *Question 49.*—(1) *When brothers succeed is any regard paid to uterine descent?*
 Brothers: uterine and associated. (ii) *Is any distinction made between associated and unassociated brothers?*
 (iii) *Between brothers of the full and of the half blood?*

Where the custom of succession is *pag vand* not *chunda vand* (see Question 33) no distinction is made between the full and the half blood, nor does it make any difference whether the brothers are associated or unassociated. It is the natural result of the custom of *chunda vand* that each mother's share in the property should remain with her children.

Question 50.—*When a man dies, leaving associated and unassociated brothers, who are entitled to succeed? Are the associated brothers entitled to exclude those unassociated in respect of property acquired by the deceased or his ancestral property?*

All brothers are equally entitled to succeed to all property; but the Hindu Rájputs say that the associated brother gets all the moveable property of the deceased.

Representation of brothers.

393. *Question 51.*—*Where there are no brothers, do their sons succeed?*

The right of representation is, as in the case of son's sons, fully recognized; and brother's sons take the share that their father's would be entitled to.

SISTERS AND THEIR ISSUE.

Succession of sisters and their issue.

394. *Question 52.*—*Does the property ever devolve on sisters or upon their sons?*

Most tribes agree that the sister and her offspring cannot succeed under any circumstances, and the Hindu Jats are particularly decided on this point; but the Mahomedan Jats of Ludhiána, Mahomedan Rájputs of Samrála, Dogars and one or two others say that they come in if there are no collaterals descended from the *nakardáda* or great-great-grandfather, and no daughter or her male issue; and

one or two instances are given of their succession under these circumstances. But it is probable that there was no one near enough to raise a dispute in the cases quoted; and I should think that sisters and their children would always be excluded by any one who could prove his relationship to the deceased. This exclusion is more complete than in the case of daughters.

HUSBAND.

395. *Question 53.—When a woman dies holding property in her own right is her husband entitled to succeed to it?*
 Succession of the husband.

All tribes agree that the husband succeeds to moveable property of the wife; but, in the case of immoveable property which has come from her own relations, most of them say that, if she leave male issue, they exclude the husband; and if she do not, he succeeds, but only to a life interest, the property reverting to her own kin on his death.

THE STEPSON.

396. *Question 54.—When a widow marries having a son by her former marriage (pichlag), does such son inherit from (i) his natural father, (ii) his step-father? If from his step-father, is there any difference between his share and those of his step-father's own sons?*
 The stepson (pichlag.)

Such a son (pichlag) succeeds to the property of his natural father; and has no claim to that of his step-father (all tribes).

Question 55.—(i) If the step-son be born after the second marriage of his mother, does this make any difference? (ii) If the step-father bestow a share on him in his life time?

If the widow be pregnant by her first husband at the time of her second marriage, and a son be born, the son is entitled to inherit from the first husband, and has no claim on the property of the second husband (all Hindu tribes, except the Lobanas and the Hindu Jats of tahsil Samrāla, who say that such a son born after the second marriage inherits equally with the sons of the woman by her second husband, being apparently treated as issue of the second union). The question is rather a fine one, and not likely to arise in practice. There is a tendency to consider a child born after the second marriage as the issue of it; and the only circumstances under which doubts would be raised are, where the birth took place two or three months after the marriage, not a likely occurrence. The right of the step-father to bestow by gift a portion of his property on his step-son is defined under Question 87. Amongst Mahomedans, however, marriage with a pregnant woman

is illegal; and, if it should take place, the son born after marriage would succeed to his natural father. Amongst Rājputs widow marriage is unknown, and the question does not arise.

Question 56.—Is a step-son (pichlay) entitled to maintenance from his step-father; and, if so, up to what age?

If the step-son live and work with his step-father, he is entitled to maintenance till he grows up (all tribes).

ASCETIC.

Question 57.—If a person voluntarily retires from the world and becomes an ascetic (faqīr) what is the effect on: (i) His right to retain his own property? (ii) His right to succeed to other property?

Effect of becoming an ascetic.

Upon whom will devolve property which he would have succeeded to but for his retiring from the world?

This question of the effect of becoming an ascetic is a vexed one. Many of the tribes and *gots* record that a man loses all claim to retain his own property and to succeed to other property by becoming a *faqīr*; while others say that he retains all rights. Of the Hindu Jats some groups give one answer and some another. The truth appears to be that a man may take a semi-religious character, and go about his affairs as usual. It is a very common thing for a Hindu Jat to assume the dress and habits of a “Sādhi,” still retaining possession of his land; and he may at any time return to ordinary life. So too with Mahomedans, and numerous instances are quoted of men of all tribes who, though known as *faqīrs*, are still in possession of all their property. For a man to be a true ascetic, it is necessary that he should have abandoned the world; and, as long as he retains property of his own, he cannot be said to have done this. It would be the best evidence against any one being an ascetic that he was still an owner of land. A man could not, then, be deprived of his property on the grounds of asceticism, nor could he be excluded from inheritance if he still retained and managed his own property. Even where he has actually given up his land on assuming the character of an ascetic, it is still apparently open to him to come back; and most tribes say that he may do so within the period of limitation. The Courts would probably take this same view. Under certain circumstances it would be a fair inference that there had been a complete abandonment of the world, *e.g.*, when a man had succeeded to the *gaddi* and become the head of a religious institution (*dharmśāla*, &c.). What all tribes are careful to provide against is the alienation by a man who has turned ascetic of his land in favor of the institution which he has joined, and the succession to it of his spiritual, to the detriment of the rights of his natural relations; and on this point there is perfect agreement. A man's natural heirs, and not his spiritual associates or disciples, are entitled to succeed to his land; and an aliena-

tion by an ascetic which would interfere with the rights of the former would be resisted.

SECTION VI.—ADOPTION.

WHO MAY ADOPT.

Under what circumstances may adoption take place: adoption of the daughter's son.

398. *Question 58.—Is it necessary that the person adopting should have no son, grandson or great-grandson? Is a daughter's son a bar to the right of adoption?*

The Rājputs, Hindu and Mahomedan, say that adoption is unknown in their tribe; and cases are quoted where an adoption has been alleged and set aside by the Courts. All other tribes are agreed that, if there is a male lineal descendant, there can be no adoption of any one.

*As to the right of the collaterals to contest the adoption of a daughter's son there is not the same agreement; but there is the strongest feeling amongst the members of all tribes and sections against such an interference with the ordinary course of devolution of property. Any disturbance of the natural order of succession to land is seen to be the cause of endless strife and dissension; and, if the people had the power of legislating for themselves in the matter, they would undoubtedly declare against anything except a very limited right of adoption. When land was not so valuable, because there was plenty of it, and also because the burdens attaching to it were so onerous that proprietary rights might almost be said not to exist, the collaterals did not interfere with the right of a man to call in his daughter's son, or any other relation to help him in fulfilling the duties to the State which the possession of land entailed on him. In fact they were probably rather glad in most cases to have such assistance. But with the increasing value of the proprietary rights in land which our fixed assessment and the attenuation of properties have created, the force of tribal opinion has, as I have remarked in the previous section, become more and more strongly pronounced in favor of the idea that a man has only a life interest in his land, and that his natural heirs have reversionary rights which he cannot alienate. These rights we recognize to some extent in the law of pre-emption; but tribal opinion goes very much further. The questions of adoption and of gifts appear to me good illustrations of the danger, of which I have spoken in the introductory remarks, of allowing custom to crystallize before it is fully developed. Numberless instances will be found in the early years of our rule in which a daughter's son was brought in by a childless proprietor, and succeeded without any opposition on the part of the collaterals, who had probably no desire to add to the land that they already held; but, on the force of these instances, to declare and perpetuate in the present state of society a custom to this effect would be to make no allowance for the great change which has taken place

* NOTE.—The following remarks are on the general question of adoption, and more particularly on the power of adopting a daughter's or sister's son. They would, perhaps, have been more appropriate under para. 404. A daughter's son could never be a bar to adoption.

in the nature of property in land. Besides this, it should be borne in mind that, for every proprietor who would desire to adopt a daughter's son, there are hundreds who have refrained from doing so under similar circumstances; and, if it were put to the vote of the agricultural population as to whether the right of adoption of a daughter's son should be allowed, scarcely any one would declare for such a rule.

It is, of course, difficult for a Court of Law with the accepted definition of a custom as founded on instances to give a decision which would meet with the approval of the agricultural community; but where, as on this point, public feeling is so strongly opposed to what has been held to be the custom in certain cases—and the instances and decisions of the Courts are repudiated by the people with almost perfect unanimity, as not really expressing what they are prepared to accept as the custom—there should at least be a very strong presumption against the setting aside of the ordinary rules of inheritance; and the most complete proof should be required from the person wishing to do so. For every instance of the succession of a daughter's son not being opposed, how many instances are there in which the collaterals succeeded as a matter of course, there being no attempt to bring in the daughter's son?

What the people do recognize without any hesitation is the power of the childless owner of land to choose one from a set of heirs equally entitled to succeed him. Thus a man without male lineal descendants, but with three or four nephews, may take one of them as his son; and such action would never be called in question. His right to provide some one who will take the place of a son and look after him in his old age is willingly admitted; but he must take one of the natural heirs, and he must not under any circumstances bring in a stranger, as his daughter's or sister's son would be, that is a person belonging to a different *got*. He must not, moreover, prefer a distant to a near relation. I have written at some length on this point, because it is important that the true state of feeling of the agricultural class in respect of the matters of adoption, gifts, &c., should be appreciated; and no such opportunity of ascertaining this as that presented by our inquiries is likely to arise. Opinions asked from agriculturists in the course of investigation of a particular case are not likely to be reliable.

Adoption of a son where the natural heirs are disqualified.

399. *Question 59.—If a man has male issue, but for some cause such issue cannot perform his funeral rites, can he adopt a son?*

No instance is known to have occurred of a man, whose son or grandson, &c., was disqualified by change of religion or other such cause, adopting another son. Some of the Hindu Jats say that adoption would be allowable under the circumstances, while others say that there is no necessity for adoption, as the collaterals would perform the obsequies. This is quite separate, of course, from the question of exclusion from the succession for such causes as change of religion, leprosy, &c., which, I may observe, has not found a place in the last section.

Adoption of two sons : 400. *Question 60.—Can a man, who has already adopted a son, adopt another during the lifetime of the first ?*
 disqualifications of the person adopting.

A second could not be adopted (all tribes).

Question 61.—Can the following persons adopt :—(1) a bachelor ; (2) blind, impotent, lame ; (3) widower ; (4) an ascetic who has renounced the world ?

(1), (2), (3), can adopt ; and (4) cannot (all tribes). Instances of (1), (2), (3) are given. As to (4), a true ascetic is of course meant in the answer (see the remarks under *Question 57*.)

401. *Question 62.—Can a woman adopt ? Is it necessary that a widow should have the permission, written or verbal, of her husband for an adoption, or the consent of his kindred ?*
 Adoption by a widow.

There cannot be said to be a custom established on this point. Most of the *gots* of Hindu Jats say that a widow can adopt under no circumstances, even with the sanction of her husband ; others, that she can with such sanction (in this case she would, of course, only have the same rights as her husband would have had) ; while other tribes and *gots* again (all Mahomedans except Rájputs and the Hindu Sainis) say that the consent of the collaterals is necessary (but if they consent there would be no one to dispute the adoption). In one case that came into the Courts (Dhálíwál Jats of Jagráon tahsil) an adoption by a widow was set aside ; while an instance is given amongst the Mahomedan Gujars of Jagráon, in which a widow adopted on the *written* permission of her husband. There was no dispute in this latter case. In the absence of instances in which a widow has adopted, I should think that the Courts ought to presume that no custom exists, and that the right is not recognized, that is, there is negative proof of the absence of the custom ; and it is certainly not necessary to refer to the Hindu or Mahomedan law for the decision of the question.

Question 63.—In the event of the death of a son adopted by a widow, can she adopt another ?

No such case ever arose ; and those Mahomedans and the Hindu Sainis who say that a widow may adopt with the sanction of her husband's collaterals, also record that she may do so a second time. As stated under 58, there is no custom of adoption recognized amongst Rájputs.

WHO MAY BE ADOPTED.

402. *Question 64.—May a man give in adoption his (1) only son ; (2) eldest son ; (3) brother ?*
 Who may be given in adoption.

Here, again, there is no distinct custom. All tribes agree that an eldest son may be given in adoption ; but as to (1) and (3), the representatives of the same tribe from different parts of the District cannot

agree. However, the answers of those who say that an only son or a brother cannot be given in adoption show merely their opinions as to what should be done under imaginary circumstances. I do not think that an adoption would ever be disputed on either of these grounds ; but it does not appear that such an adoption has ever taken place amongst the agriculturists.

403. *Question 65.—Is it necessary that the adopted son should be under a certain age? If so up to what age is adoption allowable?*
 Age of the adopted son.

There is really no limit of age for adoption ; and, although most of the tribes have recorded some such limit, these do not agree one with the other, and are merely expressions of opinion. There are many instances of adoption of grown-up men quoted in most tribes. An adoption would ordinarily be of a boy.

404. *Question 66.—Is it necessary that the person adopted should be related to the person adopting? If so, what relatives may be adopted? and what relatives have the preference? Is it necessary that the parties should be of the same tribe, or of the same got?*
 Degrees of relationship to which adoption should be confined.

The Dogars are the only tribe who asserted that a man may adopt any one outside of his own tribe, without reference to relationship. The other tribes and *gots* restrict the choice of an adopted son to a man's heirs, the nearer excluding the more remote. Thus the person adopting may choose any one from amongst the lineal descendants of his brothers ; but in the presence of these he cannot adopt from descendants of his father's brothers, and so on. If there are no collaterals the following tribes say that (i) a daughter's son, and (ii) after him a sister's son, may be adopted—all Mahomedans (except, of course, Rājputs, amongst whom adoptions are unknown), Sainis and some of the Hindu Jats of Samrāla. The degree of proximity, of the collaterals who would exclude the daughter's son, &c., is not mentioned ; but a relation through the *nakardāda*, or great-great-grandfather, would be within the recognizable degree. Most of the Hindu Jats say that, if there are no near collaterals, a man must adopt one of his own *got*, and cannot take a daughter's or a sister's son.

Question 67.—Is there any rule prohibiting the adoption of the son of a woman whom the adopter could not have married, such as his sister's or daughter's son?

No such rule is known.

FORMALITIES.

Formalities necessary for adoption. 405. *Question 68.—What formalities are necessary for adoption?*

There are, as might be expected in an agricultural population composed of Hindus and Mahomedans, neither of whom pay much observance to their scriptural law, no special and elaborate formalities attending an adoption. The adopter usually calls the neighbours

and his relations together, and distributes *gur*, saying that he has adopted (*gód-lia*) so and so; or a deed of adoption may be written. It is recognized that there must be some such public notification of the fact of adoption; but this is all.

EFFECTS OF ADOPTION.

Succession of an adopted son to his natural father.

406. *Question 69.—Is an adopted son entitled to succeed to his natural father in case of the latter having no lineal male issue?*

Most tribes say that the adopted son loses all claim as the son of his natural father; but the following tribes and sub-divisions have recorded that, in the event of the natural father leaving no lineal male issue, the adopted son succeeds to his natural father in preference to collaterals: Hindu Jats of Kheri and Khannah *ilāgas*, Lobānas and Mahomedan Jats of tahsil Samrāla, Araiens in Ludhiāna and Gujars in Jagráon. No instances are given on this point; and it may be accepted, I think, as the general custom, subject to proof a special custom in any tribe or locality, that the adopted son ceases to have any claim as a son on the estate of his natural father.

Succession to the adoptive father.

407. *Question 70.—What rights has the adopted son to succeed to his adoptive father? And what is the effect if a son is subsequently born to his adoptive father?*

The adopted son becomes to all effects and purposes the same as a natural son of his adoptive father, and takes an equal share with natural sons born after his adoption. I think that we may leave the case of there being several natural sons and an adopted son in a family where the custom of *chunda vand* is recognized till it arises.

GHAR JAWAIE.

408. *Question 71.—Where a son-in-law, leaving his own family, takes up his residence with his father-in-law as ghar-jawaie, what will be the effect on the rights of such son-in-law to inherit—(i) from his father; (ii) from his father-in-law?*

See the remarks on Question 44. No tribe recognizes the right of the *son-in-law* under any circumstances; but the right of the daughter and her male issue to succeed is acknowledged by the two or three tribes mentioned there. There is no question of the man forfeiting the right of succeeding to his natural father.

SECTION VII.—BASTARDY.

409. *Question 72.—Where a marriage has taken place which becomes illegal on account of the parties being within prohibited degrees of relationship, or of change of religion, or of difference of caste, &c., will the offspring of such a union be considered legitimate or not?*

The issue of an unlawful marriage considered illegitimate; claims of such issue; children of a *karena* marriage.

The Rájputs say that the issue of a marriage with a widow or divorced woman is illegitimate; and all other tribes, Hindu and Mahomedan, agree that, if the marriage turn out unlawful on account of relationship, caste, &c., the offspring is illegitimate. It is questionable, as I have observed (No. 24), how far a Court of Law would give effect to a custom of this nature, founded on caste prejudice, and protected only by a social punishment.

Question 73.—What are the rights of illegitimate children to inherit from their natural father?

They are excluded from inheritance (all tribes.)

Question 74.—Are illegitimate children, who do not inherit, entitled to maintenance?

They are probably entitled to maintenance during minority, though even this is denied in many places.

Question 75.—Are the sons of a karewa marriage entitled to inherit equally with the offspring of an ordinary regular marriage?

Where the custom of *karewa* is established, there is no distinction made between the offspring of this and of an ordinary first marriage; and all the children would share equally in the inheritance.

SECTION VIII.—WILLS AND LEGACIES.

Wills and legacies unknown amongst the agricultural population.

410. *Question 76.—Can a proprietor, by verbal or written directions, dispose of his property after his death?*

Wills and legacies are unknown, but the Mahomedan Jats and the Awáns of talisil Ludhiána say that a man may dispose of his moveable property by will. In no case can land be so disposed of unless, of course, in the event of all the heirs agreeing to the disposal.

In the case of *Partáb Singh v. Bishen Singh and others* (Punjab Record, No. 81 of 1877) it is laid down by the Chief Court that the distinction between alienation by will and by a disposition *inter vivos* would not be appreciated by an agriculturist; but I respectfully venture to differ from this conclusion. I have endeavoured to show that the right of a proprietor in inherited land is considered as to a considerable extent limited; and that any attempt to interfere with the reversionary rights of the natural heirs is regarded with the greatest jealousy. A gift of land to take effect during the lifetime of the donor, would be, as a rule, at once contested; and the presumption against a disposition by way of will or legacy, that came to light after the death of the proprietor, would be ten times stronger. It is scarcely necessary, however, to discuss the matter further for, while the disposition of property by gift or by adoption is recognized and admitted with limitations by the land-owning tribes, wills are entirely unknown; and,

on the strength of a doubtful analogy, to create a rule recognizing them, as was done in the case referred to above, appears to me entirely opposed to the spirit of tribal custom. The distinction that an agriculturist would at once draw between a gift and a legacy is that in the case of the former the action of the donor is liable to be questioned at the time, and the dispute would be within the family, not between the heirs and strangers. How essential this difference is will be appreciated by any one acquainted with the constitution of native society.

Question 77.—Where the power exists, is there any limit to it?

There is no power, and, therefore, no limit.

Question 78.—Can a legacy be left to one of the heirs without the consent of the others?

The consent of all the heirs would be necessary for a legacy.

Question 79.—Does a widow, who succeeds to immoveable property as legatee, take it in full ownership?

If a widow succeed as legatee, which she could only do with the consent of the heirs, she would have a *widow's* interest, as defined under Question 40.

SECTION IX.—SPECIAL PROPERTY OF FEMALES.

Special property of females: succession to it.

411. *Question 80.—Is there such a thing as the special property of females over which husband has no power? If so, who succeeds to it on the demise of woman?*

There is no clear custom recognizing a special class of property as belonging to females, and over which a husband has no control. I do not think that cases of dispute between man and wife are likely to arise about the few articles of clothes, jewelry, &c., which are usually given with a woman as dowry. Some of the tribes say that the husband has full power over all moveable property, while some say that the wife has. The truth is probably that jewelry, articles of dress, &c., which a woman receives from her parents or relations, either at marriage or subsequently, would be considered as her personal property; while other sorts of moveables, such as cattle (a usual form of dowry where the wife's people are well off) would go into the common stock of the parties, and would be controlled by the husband. Where a woman gets immoveable property from her own people, some of the answers say that she holds it independently of her husband; but I doubt if this is possible. The husband would naturally manage land thus acquired, and anything like independence on the woman's part would clearly be against all native ideas on the subject. I have not asked any more questions under this section, because none of the points on which those given in the "Customary Law" seek to elicit information, can be said to have arisen as yet. The sense of the male agricultural population (of all native society, I may say) is strongly against anything that would tend to give the wife the power of acting apart from her husband; and there is certainly no necessity at present for protecting the special property of married women.

Under Questions 43-46 the circumstances under which daughters may succeed have been recorded, and the right of the husband with regard to property inherited from the woman's father under Question 53. I need not repeat what will be found in my remarks on the answers to these questions. Also see questions 84 and 85.

SECTION X.—GIFT.

412. Question 81.—*Are there any special rules relating to death-bed gifts? Can a man make a gift on his death-bed to a relation, or in charity, or for religion (kharaiat)? Can he do so of the whole or only part of his property? If of part, what part? If some heirs consent and others do not?*

Death-bed gifts to relations and in charity, &c.

The answers to this question prove clearly that there is no custom on the points raised; but a desire was shown by the tribal representatives to lay down a rule according to what they thought fit and proper. Thus the Lobáns say that a gift by a man in good health may be valid; but a gift by a man on his death-bed is invalid. Some of the Jats say that a man may give one or two *bigahs* (*kacha*) to Brahmans on his death-bed; the Awáns say that one-third, and the Gujars one-fourth of a man's immoveable property may be given for *kharaiat*, i.e., for a religious or charitable purpose. The fact is that death-bed gifts, like wills and legacies, are unknown; and this appears to me to be the best statement of tribal custom on the point that can be made. There being no custom, the power of making such gifts may be presumed not to exist. I do not think it possible that a *bonâ fide* gift in charity, or for a religious purpose, would be disputed.

Gift of a share of joint property.

413. Question 82.—*Can a sharer in joint property make a gift of his share without the consent of the others?*

The fact of the property being joint could not prevent a person, who was otherwise entitled to dispose of it by gift, from doing so. The distinction is unknown to the agriculturists in this view.

414. Question 83.—*If a gift of land be made to a person, who is not a member of the village community, does the gift carry with it the right to share in the village common land or the miscellaneous village receipts?*

What rights in the village go with a gift of land.

If a small area is given, e.g., to a Brahman, no share in the *shámilat* goes with this; but, if the gift be of a certain share in the village, a right in the common property and to participate in the common receipts goes with it. The donee would take the place of the donor to the extent of the share gifted.

415. *Question 84.—Can a father make a gift to his daughter by way of dowry (jakez) of moveable or immoveable property, whether or not there be sons or near collaterals; or whether or not they consent?*

Dowry (*jakez*) given with a daughter.

He can give in dowry, without consulting any one, as much of his moveable property as he chooses, but cannot give immoveable property. Of course, if the next heirs are consenting, there would be no one to dispute a gift of land; but it is not the custom, except when the father is a man of great means or of very good family, to give immoveable property in dowry with a daughter.

416. *Question 85.—On whom will devolve the inheritance of property given to a daughter in dowry (jakez)?*

Devolution of property acquired in this way.

The property (moveable) given in dowry will go to the husband first, and after him to the male heirs, in default of whom it will go to the husband's collaterals. In fact the *jakez*, if consisting of moveables, merges into the husband's property, as I have before explained (Question 80); and will not return to the woman's people. In the unusual event of a woman getting immoveable property in dowry, it would devolve as explained in the answer to Question 53, at least such is the recorded statement of the tribes. I think, however, that this is very doubtful. Property coming to a woman in dowry would be transferred from one family to the other, and belong absolutely to that of the husband according to native ideas. It is only in the case of property *inherited* by a daughter in her own right (Questions 43—46) that the family of her father could be held to retain any dormant rights in it.

417. *Question 86.—Who has the control and power of alienation of property given to a woman in dowry? Her husband or herself?*

Control of dowry.

See remarks under Question 80. I have anticipated there the answer that was given by all tribes, *viz.*, that the husband has the power of management and alienation of all moveable property except, probably, the clothes and jewelry of the woman. A dispute on this point could scarcely arise.

Immoveable property is almost never given in dowry; but, if it were, the husband would, according to the answers, not have the power of alienation; but, as under the last question, I doubt if the woman's relations could retain any rights in such land.

418. *Question 87.—Can a father make a gift of the whole or part of his property (i) moveable, (ii) immoveable, to his daughter otherwise than in dowry, to his daughter's son, to his sister or her children, or to his son-in-law? If there are no lineal male descendants or near collaterals, does this make a difference? Whose consent for such a gift is necessary?*

Gifts to a daughter or sister, or to their children: who can oppose such gifts?

The right of a person to dispose by gift of his moveable property is recognized by all the agricultural tribes, and he can apparently give away the whole or any portion of it to any of the people mentioned in the question. As to immoveable property (or rather land), most tribes say that, to enable the proprietor to make a gift of any part of it to the relations mentioned in the question, he must obtain the consent of the heirs—the lineal male descendants, or, in default of them, the collaterals related through the great-grandfather (*nakardāda*). It is not said whether the gift could be made in the event of there being no one within this degree of relationship; but I conclude that a more distant relation could not object to a gift made to a daughter, sister, &c. The Dogars say that a man may give to his daughter, sister, son-in-law or brother-in-law a share equal to that of a son, if he has male issue; otherwise he may give as much as he likes. The Awāns and Gujars, who, with the Dogars, admit the right of a daughter to succeed, say that the father may make a gift to a daughter under the circumstances stated in the remarks on Question 41, i.e. where the married daughter has not left the house of her father. Some of the Hindu Jats say that a gift of land may be made to any of the persons mentioned, when there are no collaterals related through the *nakardāda*, and the others disallow such disposition under any circumstances. The Dhāliwāls alone of the Jats say that, if there are no sons and grandsons, a man may give a portion of his property to his daughter's or sister's children. I am doubtful about this statement of a custom to the effect, although such gifts have taken place and been admitted.

419. Question 88.—*What is the power of a proprietor to dispose by gift of property, moveable or immoveable, ancestral or acquired, to a person who is not a relation? Is*

Gifts to strangers.
the consent of the sons or near relations necessary for such a gift? How does (i) the fact of there being no sons, (ii) the circumstance that the property is joint, affect such power?

All tribes, except the Awāns, admit the absolute right of the proprietor to dispose of moveable property by gift as he chooses. The Awāns do not recognize even this power. As to immoveable property all tribes deny the right of making a gift of it to a stranger, except a small area (one or two bigahs *kacha*) to Brahmins (Hindus), or in *khariyat* i.e. for a holy or charitable purpose (Mahomedans.)

420. Question 89.—*Under what circumstances is a gift revocable? If possession have not been given or if the parties are relations?*

Power of revoking a gift if a son be subsequently born to the donor.

There is no custom on the subject; but some of the tribes say that, if possession have not been transferred, a gift may be revoked. Until possession has been transferred, however, the gift would not be complete.

Question 90.—*If the donor have a son subsequently born to him can the gift be revoked?*

This question is rather beyond the comprehension of the people, and a case in point has never arisen. The answers are, therefore,

speculative, and are generally to the effect that the gift cannot be revoked; but one or two tribes and *gots* say that it can be in whole or in part (one-half.) I should think that, in the improbable event of a gift of land being followed by possession, and a son being then born, the *donor* could not revoke the gift if the transfer were clearly proved; but perhaps it would be possible to have it set aside on behalf of the son.

SECTION XI.—PARTITION.

421. *Question 91.—When the father of a family is alive, whose consent is necessary for the partition of a joint holding? Under what circumstances can partition take place? Is it necessary that the wife or wives of the proprietor should be past child-bearing?*

Partition between the members of a family while the father is alive.

During the lifetime of the father partition of a joint holding can only take place with his consent. A father ordinarily divides his property amongst his sons only when there is no chance of his having more offspring; but, if a son be subsequently born, the partition would be revoked or altered with a view to provide a share for the new son (all tribes).

Question 92.—Are the sons entitled to claim partition as a matter of right?

They are not entitled to claim partition as in the last (all tribes.)

Question 93.—Can a father exclude one or more sons from their shares, or otherwise make an unequal division? If so, is any distinction made between moveable and immoveable property, ancestral or acquired?

A father can make what distribution he chooses of his property amongst his sons; but this will hold good after his death only so far as it affects moveable property. A father cannot deprive a son of his right to the share in immoveable property to which he is entitled by the laws of inheritance; and the son can claim a redistribution after the death of his father (all tribes). The Mahomedan Rājputs, Gujars and Jats of Samrāla say that a father may, according to Mahomedan law, disinherit (*'āq*) his son; but there is no recorded instance of this having been done. The only imaginable circumstances under which it could happen would be in the case of the son changing his religion.

Question 94.—When the proprietor makes a partition, are his wives, childless or with children, entitled to participate?

The proprietor may or may not give them a share, he has complete power; but a wife is entitled to maintenance, and cannot be deprived of this right.

Question 95.—How many shares can a father reserve for himself at partition?

He can reserve as much as he likes; but he usually reserves a share equal to that of a son.

Question 96.—What is the effect of the birth of a son after partition? Can the father revoke the partition? If the father have reserved a share for himself, will such share devolve exclusively on the son born after partition?

The father can, under these circumstances, revoke the partition (see under 91) and make another for the benefit of the son. If a son be born after the death of the father, he would be entitled to take a share from his brothers. All the heirs have an equal right in the share reserved by the father for himself. If a son be born after partition, and succeed to the share reserved by his father, and this be smaller than those of his brothers, he could claim to have his share made up.

The general result of these answers is that the father may, during his lifetime, make what arrangement he chooses about his immoveable property (land); but he cannot do anything to affect the reversionary right which every son (or his representatives) has in such property; and an arrangement made by the father ceases to have effect on his death. On the one hand the paternal authority is supreme during the father's lifetime, and the sons cannot interfere with the exercise of it: but on the other hand the sons have dormant rights in the immoveable property, and the father cannot set aside the ordinary laws of inheritance. Over moveable property the father has absolute power.

Partition on behalf of a widow, daughter, &c., succeeding to an interest in property.

422. *Question 97.—Can a widow claim partition (i) if she have sons; and (ii) if she have not? Can a daughter or sister, if unmarried, claim partition?*

A widow who has no male offspring, and is, therefore, (see Question 39) entitled to a widow's interest, can claim partition of her share; while, if the widow has sons, she is dependent on them for maintenance. A daughter or sister cannot claim partition (all tribes). No case of a daughter or sister claiming partition has ever occurred as far I could discover, nor is one likely to occur, as these persons could only succeed under circumstances, which would leave no one against whom to claim partition, and the answer is a mere expression of tribal opinion as to what should be done under these most improbable circumstances.

Question 98.—If partition be made can a widow claim a share? If so, what share, and on whom will it devolve after her death?

The greater right includes the less, and, as the childless widow of a sharer can claim separation of her share (last question), she can do so when a partition takes place on the motion of other sharers.

There is a strong feeling, as might be expected, against the separate possession by the widow of her share, and several of the sets of representatives stated what they thought ought to be restrictions on the exercise of the right. The dispute that generally arises is where the widow of one brother claims separation of her share from the others, the holding having hitherto been a joint one; and it will usually be found that she states in her claim that her husband's heirs, who have possession of the joint property, refuse to maintain her. It will also be found as a rule that the claim is brought at the

instigation of her own relations, who wish to get the management of the land; and the opposition of the sharers is founded on this fact, and also on the unwillingness to allow the widow, who is herself considered to be family property, to get out of their power. The Courts now admit the right of the widow to separate possession of her share, as the natural consequence of her being entitled to it, and the people themselves do not deny this right in the last resort; but they think that she ought to be content with maintenance if her husband's relations are prepared to offer it to her in good faith. It would be quite at variance with the feeling of the agricultural community to allow partition on the application of the widow as a matter of course. So far as there is a custom on the point, I should say that it would make it incumbent on the widow to prove that her husband's relations refused or neglected to support her. The land, it is felt, ought to be left in the possession of the husband's relations, and the widow allowed so much as will represent the proprietor's profit on her share. It is not too much to say that the husband's relations consider the land and the woman as good as gone from them for ever, when the Court has allowed partition of her share.

Disputes often arise where a widow with minor children claims partition against the uncles, and these same influences will be found at work on both sides in such cases.

423. *Question 99.—Has the son who lives with his father after*

partition the right of succession to the whole of the property reserved by the father, or will the other sons also succeed?

Right of the son who remains associated with his father after partition.

The answer to this has already been given. It is a very common thing for a proprietor, where the conditions of the agriculture admit of it, to assign to each of his married sons a separate share of the ancestral holding; and to keep with himself the younger sons, who have not yet been married. The son who has a wife cannot ordinarily remain in the same house with his father and brothers; and, unless the holding requires to be worked jointly, as it does in the highly irrigated parts, this is often followed by a separation of the share of such son. But this, as explained under Question 96, is only a temporary arrangement. With the increasing scarcity of land, too, such arrangements are becoming much less common than they were. The son or sons who continued to reside with their father would keep the moveable property of the father on his death; but, if the father had retained more than the share to which the son or sons would be entitled by inheritance in the immoveable property, the other brothers who were living apart could claim a share in the excess, or a fresh partition.

424. *Question 100.—Will an acquisition made by a father after*

partition devolve equally on all sons whether or not one or more sons have remained associated with him? If the acquisition be made by the help of the associated son?

Acquisitions by a father after partition.

If the father have made the acquisition with his own (that is, the family) property, and it be immoveable property, all the sons are

entitled to participate in it, whether living with him or apart. If the associated son have acquired the property through his own exertions and from his own means, it is not liable to partition. The moveable property, as above, goes to the associated sons (all tribes).

Question 101.—If a son remain associated with his father and die childless, can the other brothers claim a share in his property during the lifetime of the father?

They cannot claim a share during the lifetime of the father (all tribes).

PART II.—Local Custom.

425. In the inquiry into Tribal Custom I have adhered as closely

The nature of local or as possible to the plan of Part I, Vol. III, of agrarian customs.

Mr. Tupper's "Punjab Customary Law;" but in the matter of Local Custom complete discretion appears to be allowed to Settlement Officers as to the subjects and method of investigation, and it is necessary that this should be so. The customs coming under this head have, as pointed out by Mr. Tupper, usually no connection with the tribe or family, but are entirely the result of local conditions. The term Customs does not appear to me to be strictly applicable to them, as they are in a great measure matters determined by agreement; and it would be more proper to say that they are *customs controlled by agreement*. The most important part of them find their way into the Administration paper (*wājib-ul-arz*) of each village, which contains the agreements between the members of the village community as to the administration of village property and affairs. This paper has an authority as part of the Settlement Record; and its provisions can be altered only in the same manner as other parts of such Record; but, although these provisions generally express the past custom in the matters to which they relate, they can be, and are, altered by the agreement of the parties. It is not to be expected that such matters as the dues paid to village artizans, the management and partition of the village common land, the rights of tenants should be decided by custom derived from a state of society which has passed away. These matters are really subjects of agreement; and the provisions concerning them are liable to alteration from time to time by fresh agreements between the parties.

426. The only one of the subjects coming under this second

Customs relating to allu- part of Local or Agrarian Custom on which vion and diluvion.

inquiry has been made for a tract as a whole, and not for each village separately, is the collection of customs relating to land subject to the action of the river—Riverain law. All other matters of inquiry suggested by Mr. Tupper will be found to fall under one or other of the heads prescribed for the village administration paper in the Rules under the Land Revenue Act; and it is much more convenient to have them there. There is a very considerable amount of divergence in the practice on many points between village and village; and a separate record of the customs and

agreements for each village is likely to be more reliable than a general statement for a collection of villages, because in the former the whole community of each village have an opportunity of expressing their views, while the latter is made out from the answers of a few representatives of each village.

In this second part, then, I will first give some account of the customary rules determining in each separate locality or tract questions that arise in connection with the action of the River; and after that of the provisions of the village Administration papers.

A.—THE CUSTOMARY LAW OF ALLUVION AND DILUVION IN VILLAGES ALONG THE BANKS OF THE SATLEJ.

427. The river Satlej bounds the three tahsils of the Ludhiāna district on the north, separating a small portion of Samrāla from the Garhshankar tahsil of Hoshiārpur, and the remainder of Samrāla and the whole of the others from the Nawashahr, Phillour and Nakodar tahsils of Jalandhar. No other

Method of making the inquiry into the custom of alluvion and diluvion.

river touches the District. The inquiry as to the Riverain custom was made by Extra Assistant Settlement Officer, Ahmad Bakhsh, from the people of the villages on both sides of the River, assembled for the purpose at several places along its course.

For this inquiry the Ludhiāna villages were divided into five groups—

- (1) Those of Samrāla opposite Garhshankar.
- (2) Those of Samrāla opposite Nawashahr (Jalandhar.)
- (3) The upper half of the villages of Ludhiāna tahsil.
- (4) The lower do. do.
- (5) The villages of Jagrāon tahsil.

At the attestation of the custom of (2) to (5) Mr. L. W. King, C.S., then on Settlement duty in Jalandhar, was present, and assisted. Group (1) consists of only a few villages.

Nine simple questions on the lines of those in Mr. Tupper's Panjab Customary Law, Volume III, Part II, Sec. II, were framed and given to the Extra Assistant Settlement Officer; and these, with an abstract of the answers to them, will now be detailed.

I.—Custom between villages on opposite sides of the River.

428. Question 1.—*When the land of a village goes by diluvion (abrasion), and land is recovered on the opposite side of the stream, adjoining another village, will such land belong to the original village, or to the village on the opposite side to which it has come by accretion? Is any distinction made between land that is capable of identification and such as is not?*

General custom between villages on opposite sides of the River as to land coming by alluvion, separation, &c.

Question 2.—*Where, by a sudden change in the course of the deep stream, land which is susceptible of identification has been transferred from one side of the deep stream to the other, will such land remain the property of the original owners, or will it go to the village community adjacent to whose boundaries it has become situate?*

These two questions are most conveniently taken together. The history of the custom prevailing between villages on opposite sides of the River appears to be as follows. The course of the Satlej is constantly shifting within the limits of its valley, the present Bet tract, which has a width of five or six miles. Most of the villages were founded at the beginning of the present century; and from 1806 to 1846 the country on both banks, which was only partially cultivated, formed part of the kingdom of Ranjit Singh and his successors. I do not suppose, then, that the Deep-stream rule, pure and simple, was ever in force. Disputes were not common because land was so plentiful, and the minor chiefs who held the country under the Lahore Darbár were probably a law unto themselves, deciding claims not on any fixed principle. Since annexation there have been innumerable disputes, as the changes in the River's course have been very violent, and there are few villages on its banks that have not been one or other party in a case regarding doubtful land. The question may be said to be still to some extent in a state of flux, and it cannot, perhaps, be affirmed that any general set of customs is as yet absolutely established. The *law creative faculty* is still in operation, and will eventually, no doubt, with the aid of our Civil Courts, produce recognized rules to suit the fully developed condition of the Bet tract. I can only show what the present state of the custom is.

Even where the Deep-stream rule (*kishti bana, dhár kalán, &c.*)

The Deep-stream is retained, two modifications of it are almost everywhere recognized. (1) Land susceptible of identification, i.e., a portion of an estate bodily separated off by change in the course of the stream (*rukhs girdáni, baghal phir*), belongs to the original owners. The great majority of the villages have in their statements accepted this; but there are disputes going on at present, and it is denied by one or two in Ludhiána and Jagraón. I do not suppose, however, that a Court of law would act contrary to this principle, even if there were much stronger evidence of a custom against it than exists; and I think that it may be considered to have acquired the effect of a customary law.

(2). Where the whole area of an estate has gone by diluvion, the proprietors are entitled to land re-appearing on the same *site*. The site is determined by the map of the Regular Settlement (1850), this being the period which the villages accept as their starting point in all questions of title in land of this character. The above rule has nowhere been denied.

Between most of the villages of the Samrála tahsil and those of Garhshankar and Nawashahr tahsils facing them, the Deep-stream rule has been entirely abrogated, and in its place that of "*thákbast bana*" or "*hadbast bana*" adopted; that is the *wáxpár* or *léndén* rule of other parts, by which the boundaries of each village are of a fixed character and meet, whether the land is covered with water or not. The

boundaries accepted are usually those of the Regular Settlement; but in some few cases the people hold out for those of some particular year, in which there was a dispute and a decision given, or an agreement come to on the point. The fact is that in the first ten miles of its course through the Samrála tahsil, the Satlej has shifted its course so much that most of the villages now on both sides of it were thirty years ago removed from its banks, and had perfectly defined limits. Where we have now included in our inquiries villages that may hereafter become liable to the action of the River, and asked the proprietors of them by what rule they will abide, the answer has been in every case that they will adhere to their present boundaries. Some few villages in the upper part of the Ludhiána Bet have also agreed with those on the opposite side to abide by fixed limits; but in Jagráon and the greater part of the Ludhiána tahsil the rule of *accretion*, that is of the Deep-stream with the two modifications noted above, still prevails and has been acted on.

The rule of fixed boundaries, which appears to have been adopted in the Samrála villages by agreement some twenty-five years ago, is obviously the only just one; and I doubt not that it would be accepted by the whole of the villages on both sides of the River. The difficulty would be as to what should be taken as the starting point; but I have no doubt that most villages would accept the Regular Settlement, made about 1850, in which rights were for the first time properly defined.

The Deep-stream rule, even with the modifications above, may give results that are really most inequitable, as will be seen from two instances. The land of a village may go by abrasion till only five or six acres are left, fresh land being thrown up within its Settlement boundary on the opposite side of the River; but because of this petty area still left, it could not by the rule, if followed strictly, recover land according to its old limits. Again, the land of a large village may go gradually by alluvion to the opposite side of the River, till only a narrow strip is left, and the stream then suddenly change its course, transferring bodily (*rukht girdáni*) a large plot which, because recognizable, is given to the people who held it for a few years on the opposite side. Thus the original village is cut off effectually from any chance of recovering land, being denied a frontage on the river. This latter instance is founded on the facts of a case decided by me in the Kasur tahsil of the Lahore district some years ago. In the record of our inquiry (*Rawáj-ám burd-o-barámad*) it will be found that we have shown very fully the exact state of the custom at present, an account of what has happened in almost every village being given, with lists of the villages which now accept each custom. With this and any other information that the parties produce, the Courts will have to decide what rule should be applied in each case as it arises; but I should think that, where an agreement by a village to accept a certain rule has now been recorded, effect would be given to this as to a regularly established custom.

429. Question 3.—Where by the separation of the deep stream an island has been formed from the river bed opposite two or more villages on different sides of the river, to which of such villages will the island belong?

Rights in islands.

Where the rule is that of the Settlement boundary (*thákbast bana*), the area of both villages is first made up to this limit, and whatever is over, lying between them, is divided and assigned to each village in proportion to its Settlement area. Elsewhere the Deep-stream decides the question, the island belonging to the village which is on the same side of the deep stream. An island is called *Mand*.

430. Question 4.—Where there are two or more channels, by what rule is it determined which should be considered the deep stream?

Rule for determining the deep stream.

The deep stream is that which contains the most water, width and depth being considered. Where the width of two streams is about the same, the depth is measured. Where it is quite impossible to decide by ordinary means which stream has the greater volume, a boat is let go at the point of separation, and the deep stream is that down which it floats.

II.—Custom between villages on the same side of the River.

431. Question 5.—Where the whole land of a village has been destroyed by diluvion, and land re-appears on the same site, but is not susceptible of identification, will the land go to the proprietors of the village on the site of which it has re-appeared, or to the village to whose lands it has become attached by accretion?

Land re-appearing on the site of an old village.

The answer to this has been given above—the second modification of the Deep-stream rule that I have noted as accepted everywhere, not merely where the rule is that of the *thákbast bana*. The village whose land has been destroyed is entitled to recover the whole of its land according to the Regular Settlement map.

432. Question 6.—When land is recovered by accretion, how is the boundary between two adjoining villages in it determined?

Rights in land thrown up in front of two adjoining villages.

In all cases the maps of the Regular Settlement, so far as they go, are accepted as defining the limits of the adjoining villages. Where land beyond these limits has to be divided, each village gets the land in front of its Settlement area. Where the rule is that of *thákbast bana*, the case could not arise, as all land in the bed of the River belongs to some one. In the Ludhiána Bet it is said that the boundary between two villages is determined by continuing the line of the last two boundary pillars of the Settlement map. In Jagráon the limit is said to be a straight line (presumably one due north) to the River. There is, I am afraid, no certainty on this point. In places land-marks beyond the reach of the River are recognized as giving the line of division between two villages; but generally it has to

be determined, according to the circumstances of each case, how much of the land can be said to be in front of each village, no more definite guide being given.

III.—Between Proprietors of the same Village.

433. Question 7.—*To whom belong lands gained by alluvion or avulsion? Do they belong to (i) proprietors of land destroyed by diluvion on the site where the accretion has formed? or to (ii), proprietors owning the lands adjacent to which the accretion has formed? or to (iii), the village community?*

Do the rights vary according as the land gained is or is not capable of identification?

As to the disposal of land that comes to a village by accretion or by change in the course of the River (but the latter is scarcely a possible contingency, as the land would belong to the original proprietors of the other side) the customs are various. (a) It may be the rule to make up the losses of each co-sharer annually from the village common, or from land held by other sharers. In this case the new land naturally becomes the property of the community. Or (b), it may be the custom that each co-sharer has to bear the loss that he suffers from the River, and must wait till land again re-appears on the site of his fields. In this case all land recovered outside of the limit of the Settlement map, or which has never been in the possession of a proprietor, becomes village common property. (c) In four or five villages the custom followed appears to be that losses are not made up to the losing proprietor, and still new land recovered becomes village common, rather an inequitable arrangement surely.

The details as to these various customs will be found both in the *Rawd-j-ám burd-o-barámad* and in the Administration paper of each village. The entries in the latter were attested by the Superintendents along with the other provisions of the paper; and should prevail against the former, if any discrepancy appear, which I scarcely expect.

Question 8.—*Where on the site of land destroyed by diluvion new land is formed, and the old land had been partitioned, will such partition be maintained in the new land?*

The answer to this has already been given in that to the last question. Where the loss of each co-sharer is made up annually, the new land would be divided afresh according to the village shares. Where the fields of the Regular Settlement are perpetuated, a fresh partition could only take place of land outside the Settlement limits; and the partition would thus be an entirely new one.

IV.—Rights of Tenants.

434. Question 9.—*When the land of an occupancy tenant goes by diluvion, is he entitled to have his land made up from the village common, or from the land of the proprietor under whom he holds? When land goes by diluvion and fresh land appears on the same site, does the tenant recover his rights in it?*

Occupancy rights in land going by diluvion and re-appearing.

Occupancy tenant right being a creation of our rule, it was not to be expected that we should find any *custom* existing on this point. There are very few occupancy tenants in the villages along the River; but the attestation was done by inquiry from such of them as were present. Where, as is often the case, the occupancy tenant holds a *share* of the land of the village, his right was recognized (except in one village) to get his portion of the land assigned to his proprietor in the annual adjustment. When a proprietor is entitled to land appearing on the site of his Settlement fields, the occupancy tenant is also entitled to recover his rights in the fields that he held before. These two principles are not undisputed; but we cannot expect an established and admitted custom on the point. It is likely that the Courts will accept and affirm the equitable principle that the mere submersion of the land, being a fact beyond his control, does not destroy the right of the hereditary tenant. Where the tenant holds a *share* of the village, he differs at present but little from a proprietor. The question of his sharing in the division of the ordinary "shámilat" must be kept distinct from this rule, which would only entitle him to have his holding brought up to its size at the time of attestation of rights in the Regular Settlement.

B.—THE WÁJIB-UL-ARZ, OR VILLAGE ADMINISTRATION PAPER.

435. An Administration paper was made out for each village under clause 5, section 14, of the Land Revenue Act, according to the heads prescribed in the Rules.

Nature of the provisions
of the wájib-ul-arz.

Some of the provisions of this paper are merely expression of the orders of Government in regard to the payment of revenue, remuneration of village officers, &c. Those concerning the relations of the village community, proprietors and residents, amongst themselves, are in the main founded on usage; but they are really of the nature of agreements, and are liable to be altered from time to time with the consent of the parties. It is not from the fact of their expressing the custom hitherto followed on any point that they derive their force, but from the agreement of the parties to abide by them. On one or two points it will be seen from the analysis, which I am about to give, custom is still followed; but on most this has been modified in order to suit the altered conditions of the village.

436. The wájib-ul-arz of the Regular Settlement was made out about the year 1850. It had the same legal force as the rest of the Settlement Record; and

The former wájib-ul-arz.

its provisions could only be altered in the same way as entries in the Record, *i.e.*, by agreement, by judicial decision, or according to facts subsequently occurring. The old conception of a wájib-ul-arz was, however, different from ours; and the former paper expressed rather what the Settlement Officers thought to be proper rules for guidance in the matters concerned, than either the customs or the agreements of the people.

The greater part of the provisions were identical all over the District, and there were but few points of difference between the conditions

for the villages. In fact the paper was a series of rules prescribed by the Settlement Officer for observance in the management of village affairs. Some of the matters as to which the old wājib-ul-arz contained directions have been since provided for by general law ; while some of the conditions, being founded neither on custom nor on agreement, have been inoperative from the first, and others have since become so.

437. The portions of the new wājib-ul-arz which depend on custom or agreement were carefully attested for each village by the Superintendent on the spot, and practically in the presence of the whole community, proprietors and residents of the mercantile, artizan and menial classes. There is room for a good deal of diversity in the various matters of custom or arrangement between the members of the community ; and I think that all details which are peculiar to any village have been recorded in its wājib-ul-arz.

438. The first clause of the revised wājib-ul-arz gives the amount of the new assessment, the instalments in which it is to be paid, and the method of distributing it between the co-sharers, while the second details the cesses. As will be seen from paragraph 313, the distribution of the revenue is a matter with which custom has but little to do ; nor would any weight be attached to a claim that a certain method (*bāch*) should be continued, because it has been in use from time immemorial. The revenue payable for each holding ought to be fixed entirely with reference to its capabilities at the time of assessment, unless the proprietors agree to maintain some customary form of distribution, or to apply some new one which they consider more suitable. As a matter of fact, although the original village shares have not been completely lost sight of, they have in very few cases been used for the purpose of the internal rating of the village for the revenue demand, and the extent or quality of the land held by each co-sharer has been accepted almost everywhere as the test of his liability.

439. Every proprietor in his own right is entitled to claim separation of his share, and clearly a provision that prevented him from getting possession of it could not, under any circumstances imaginable in this district, have effect even if it had been recorded. Re-allotment of land once divided, and readjustment of the revenue demand during the term of the Settlement are alike unknown (the conditions as to land subject to the direct action of the River can scarcely be called an exception to this statement).

440. There is very little culturable waste left anywhere in the District. Such pieces of public village property as roads, ponds, &c., are necessarily excluded from partition. It would, perhaps, have been possible to do something towards the protection of the grazing lands that still remain in some villages ; and there was a desire on the part of the people that they should be

allowed to bind themselves by some strict conditions on this point; but a departmental order (Settlement Commissioner's Circular No. 21 of 1880) forbade the insertion of provisions restraining the power of the sharers to demand a partition when they chose. The partition, it was laid down, must not be made to depend on the wish of the majority; and, practically, any single co-sharer has the power of insisting on being put in separate possession of the portion of the common land to which he is entitled. The question of protecting grazing lands is not, however, one which has very much importance in Ludhiána, as the cattle are almost entirely stall-fed; and I do not see how it would be possible, without special legislation, to restrain a proprietor from the exercise of such an undoubted right.

Under this clause are recorded the method of managing the village land, so long as it remains common property, and the manner in which it is to be partitioned. Village common land may be cultivated by a proprietor or other person with the consent of the community, given on their behalf by the lambardárs or headmen. Any one cultivating in this way is a tenant of the community, and the rent fixed by the lambardárs for the land is an item in the common village receipts. There are other receipts from the common waste land in some villages on account of timber and fruit trees, grazing dues, &c.; and all such sums are either credited to the village fund, or distributed at once amongst the sharers, according to the manner of treating the village fund agreed on. Large sums are in some villages now and again realized by the sale of timber, and divided by the proprietors.

This clause also describes the manner in which a partition of the common land is to be effected. The measure of right of the proprietor or of the sub-division of the village is, as a rule, the ancestral or customary shares, seldom the *khewat* or amount at which the land has been rated. Usually the land is first marked off into equal shares, which are assigned to the sub-division (*pattis* or *thulas*) by lot according to the extent of the rights of each. Inside of these again, the land is assigned to the individual sharers in various ways; but now-a-days most partitions are effected through the revenue authorities.

441. The village site, like the rest of the land, belongs to the proprietary body. The resident non-proprietors, who have presumably settled down with the permission of the co-sharers, are entitled to occupy the sites on which their dwellings stand; but they cannot transfer them, or even dispose of the building materials in some places, without the consent of the latter.

Clause 5 : Rights over the village site.

It was the almost universal custom for the proprietors to levy dues (*atrâfi*) from all resident shopkeepers and artisans, really as a return for the privilege of residence enjoyed by the latter; but in most parts of the District the right has under our rule ceased to be enforced, and could scarcely be revived. In many villages there is a struggle going on even now; and it is not improbable that in time the custom will become extinct.

Atrâfi.

A small annual tax (from two annas to one rupee) was levied from each shop or artisans' house ; and, under native rule, the Lambardár readily realized this, for he had great power inside the village ; but of late it has generally been found impossible for him to make the people pay, as the only remedy is a separate suit for each single item by the proprietary body of the village or sub-division against the recusant shopkeeper, &c., and the latter would be as likely as not to get the best of the dispute. Most villages have thus allowed the right to become extinct ; but in the Jangal and adjacent villages the proprietary body has retained its full authority over the non-proprietary, and the dues levied in the shape of *atrâfi* or by weighman's fees, *i.e.*, an allowance on all transactions in grain taking place in the village, cover the village expenses.

Under this clause the rights of the proprietors to the manure of the residents is also declared ; and certain minor dues, such as marriage fees, &c., which are very uncommon.

442. No village recognized the right of a sharer, whose land is taken up for a public purpose, to have his loss made up either from village common or by contribution from the other sharers. He gets the compensation in cash from Government, nothing more.

Clause 6 : Claims in respect of land taken up for public purposes ; alluvion and diluvion.

The customs as to making up the share of a proprietor who loses land by diluvion, and the disposal of land coming by alluvion, have been fully described in paragraph 433.

443. The appointment and remuneration of village officers are regulated by law, and such details as are necessary concerning them will be found in the Report.

Clause 7 : Village officers.

444. In paragraph 87, I have already given some account of the income and expenditure of the village fund (*malbah*). The entries about it in the *wājib-ul-arz* are of considerable importance. The management is a fertile source of dispute between the Lambardárs and the other proprietors, the former regarding the fund as absolutely at their disposal, and the latter constantly attempting to interfere in the control of it. In some villages the agreement recorded is that the Lambardárs shall collect a certain small percentage on the revenue (which has not been allowed to exceed the limit fixed by Financial Commissioner's Circular No. 4 of 1860), and are responsible for all the usual public expenses. When this has been accepted, it will usually be found that the Lambardár just manages to cover his outlay by what he collects. As a rule, however, the management of the *malbah* is not entrusted absolutely to the Lambardár. There is a growing tendency to dispute the authority of this officer at every point ; and, although it was not denied that there should be a village fund, to be expended for certain well recognized purposes, such as the feeding of *fāqirs*, &c., an attempt was made to have it controlled by the whole pro-

Clause 8 : Village expenses.

prietary body. The provisions actually agreed to were usually to this effect. The Lambardárs have the right of spending money from time to time on the usual objects as the necessity arises, getting it from a shop appointed for this purpose (*malbah-bardár*). Twice a year just before the accounts of the village are made up by the Patwári for the realization of the instalment of revenue, the village fund accounts will be audited on a day fixed for the purpose, of which notice shall have been given. In the presence of the Lambardárs, and such of the co-parceners as choose to attend, the accounts for the half year are made up, and any one who wishes to do so may object to any item. The amount due is distributed and realized with the revenue demand by the Patwári. There is often a set-off against the expenditure in the shape of *atráfi* and other fees; and in the Jangal tract the village expenses are more than covered by a weighman's fee levied on all grain transactions within the village.

445. As there is very little waste land, it was to be expected

Clause 9 : Sayer.

that the sources of *sayer* income would be very few. Reference has already been made (clause 4) to the receipts from the sale of timber, grazing dues, &c.; and, in the remarks under clause 5, mention is made of the manure accumulating on the premises of residents who are not proprietors. Some few villages periodically distribute large sums obtained by the sale of *dhak* or other wood on the waste land; but from the other sources there is almost no income.

446. The only irrigation rights at present in the District are rights

Clause 10 : Irrigation in wells. The shares in a well are often very rights. elaborately subdivided; and a record of them is to be found in the *Naqsha Cháhát*. Each sharer is entitled to a *vári* or portion of a *vári*, that is the right to work the well for a day and night (eight *pahrs* or watches) in the cold weather, and for a day or a night (four *pahrs*) in the hot weather; and the succession of the *váris* is determined by lot. The moveable gear (rope and bucket) is the property of the sharer; and repairs to the well have to be executed at the joint cost. There are minor provisions on various points. The right of cultivators to sink wells is recognized under no circumstances.

447. At the Regular Settlement all absentee proprietors were

Clause 11 : Proprietors absent or out of possession. recorded as *mafrur* or absconding; and in those days it was considered in the light of an offence against the State if a holder of land failed to fulfil his duty by cultivating it and paying the revenue. A condition was entered in the old *wájib-ul-arz* that such a sharer might get back his land if he appeared and claimed it within a period of twelve years. Now we recognize two classes of sharers out of possession: (1) *Ghair kábiz*, one who resides in the village, but has not got possession of his rights; and (2) *Ghair házir*, one who is also absent. It cannot be said, I think, that there is, or that there ever has been, a custom as to the treatment

of the rights of absentees. Our law says that twelve years of adverse possession gives the holder a right as against the person out of possession; and it will always depend on the circumstances of each case whether the possession is of this nature or not. In the attestation of rights an inquiry was made as to the title of every person whose name appeared in the old (annual or Settlement) papers as a proprietor, but who was not actually found in possession; and the terms under which the land was held were set forth. Thus *A* was found and recorded as in possession of his own share and that of his brother or uncle *B*, who was absent on service, *A* managing the whole estate, and *B* retaining all his rights. This, of course, is the simplest case; but there were few complications. The persons entitled to the management of an absentee's estate, if he has made no arrangement for it himself, are his heirs in their proper order.

448. The Codes of Tribal Custom deal with the question of succession to, and transfer of, landed property; and the final orders on the subject are that no mention is to be made in the *wájib-ul-arz* of these matters, for to do so would be to give to the entries in the *Ruwáj-ám* on these points the force attaching to all entries in the Settlement Record, and not merely that of evidence as to the custom. In the matter of pre-emption the old *wájib-ul-arz* extended the exercise of this right by the heirs to cases of temporary transfer (mortgages); but the entries on this point were merely inserted by the Settlement Officer from an idea of what he thought fit; and they have been a dead letter from the first. They do not appear in the new Administration papers.

449. General provisions have been entered according to the wording of the orders of Government on this subject, reserving to Government all rights in Nazul-buildings, *kankar*, quarries, &c.; and these need not be detailed.

450. In paragraphs 319—321 of this Report, I have described the system sanctioned for the treatment of land subject to the action of the River; and the conditions, rates, &c., applicable to each village have been entered under this section of its *wájib-ul-arz*.

Máfi plots are invariably owned by the *máfidárs*; and, on the occurrence of a lapse or on resumption, the *máfidár* or his heirs would have the right to engage for the revenue. If they should chance to refuse, the proprietors of the *thula* or *patti* in which the land is situated would have the right, the minor subdivision having the first claim.

451. A fine imposed on the whole community would be levied on all the members like the *chaukidár's* tax, that is on houses; but such fines are, I believe, unknown now-a-days.

Clause 16 : The rights of cultivators.

Tenancy Act.

452. (1) The right of occupancy tenants to alienate their tenure is defined by the

(2) Occupancy tenants have everywhere the right to cut trees growing on their holdings for the purpose of making the ordinary agricultural implements ; and their right to cut and sell is also admitted in some villages. It is said that, when such tenant pays in kind, the proprietor is entitled to a share of the trees as of other produce.

(3) As to manure—an occupancy tenant is entitled to use his own refuse heap as manure for his holding.

(4) Tenants-at-will have no power of alienation, or of cutting trees ; but they are entitled to their own refuse heaps as manure.

(5) There are no recognized liabilities other than rent.

453. In paragraph 128 of the Report, an account has been given of the village artizans and menials, of the tasks to be performed by them, and of the dues that they usually receive. These will be found fully recorded for each village under this clause, as they were ascertained at the time of attestation ; but I would remark that the agreements between the proprietors and their *kamíns* on these points are apparently, notwithstanding the fact of their being entered in the Administration paper, liable to revision at any time. On the one hand an undertaking by a *kamín* to perform a certain task for the next thirty years could scarcely be recognized as capable of being enforced against him and his heirs ; and, if this view is correct, then the proprietor can scarcely be called upon to pay the dues under a one-sided agreement. The truth is that the entries are little more than statements of what tasks are performed by the *kamíns*, and what they receive from the proprietors at the present time ; and this is the way in which they have been recorded in many cases. On a claim being made by either party, it would be open for the other to show that the terms of the agreement had been altered in practice. I think that the true foundation of the agreement is this, that, in return for the privilege of being allowed to reside in the village, the *kamín* agrees to perform certain tasks, and the proprietor makes certain allowances to him for his work. The performance of the tasks is an incidence of the residence, and not a personal liability of the *kamín* ; and the *kamín* could free himself at any time by leaving the village.

APPENDICES

LUDHIANA SETTLEMENT REPORT.

NOTE.

Of the following Appendices Nos. I—VI contain information for the whole district similar to that already submitted for each tahsil with the Assessment Reports. They correspond to Forms A to D prescribed by the Rules under the Land Revenue Act (C. V.)

Nos. VII and VIII are statements of land tenures in the forms of Statements XXXIII and XXXIV accompanying the Revenue Administration Report.

Nos. IX—XI show the Gazette Notifications, conferring powers on the Settlement officials, the case work disposed of by them, and the expenditure from all sources on the Settlement.

Nos. XII—XV are not specially prescribed, but give information on several subjects of general interest, which could not conveniently be included in the body of the Report.

APPENDIX I.

STATISTICS OF AREA, IRRIGATION, GENERAL RESOURCES
AND ASSESSMENTS.

APPEN

1	2	3	4	5	6	7	8
Serial number.	Name of tahsil.	FORMER AND PRESENT STATIS- TICS COMPARED.	NUMBER OF VILLAGES.				Total area.
			Khalsa.	Shared.	Jágir.	Total.	
1	Samrála.	Former ...	197	9	67	273	1,84,593
		Present ...	214	18	41	273	1,84,589
2	Ludhiana.	Former ...	355	20	82	457	4,40,157
		Present ...	366	16	77	459	4,34,039
3	Jagrón.	Former ...	161	8	6	175	2,63,203
		Present ...	168	5	2	175	2,63,539
4	Total.	Former ...	713	37	155	905	8,87,953
		Present ...	748	39	120	907	8,82,167

DIX I.

9	10	11	12	13	14	15	16
SECTION I.—AREA AS ARRANGED FOR ASSESSMENT.							
MINHAI OR UNASSESSED.		MALGOUZABI OR LIABLE TO ASSESSMENT.				DETAIL OF CULTIVATED AREA.	
						Artificially irrigated.	
Forest and Government property.	Unculturable.	Culturable.		Cultivated including fallow of less than 2 years.	Total liable to assessment.	Chabi (irrigated from wells) Duabi.	
		Culturable waste.	Fallow of 2 to 4 years.			Niái (1st class).	Khális (2nd class).
16	16,534	21,461	4,083	1,42,499	1,68,043	20,016	24,329
2,760	17,260	14,138	1,461	1,48,970	1,61,569	16,802	29,349
478	37,060	67,425	8,360	3,26,834	4,02,619	17,052	23,341
3,475	26,650	50,909	2,979	3,50,026	4,03,914	27,548	13,990
32	15,398	35,208	4,058	2,08,507	2,47,773	7,470	6,104
1,916	14,433	15,748	1,429	2,30,013	2,47,190	11,850	3,423
526	68,992	1,24,094	16,501	6,77,840	8,18,435	44,538	53,774
8,151	58,343	80,795	5,869	7,29,009	8,15,673	56,200	16,762

APPENDIX

Serial number.	Name of taluk.	FORMER AND PRESENT STATIS- TICS COMPARED.	17	18	19	20	21
			SECTION I.—AREA AS ARRANGED FOR				
			DETAIL OF CULTIVATED				
			Artificially irrigated.			Not artificially	
			Cháni Bét.	Other irri- gation.	Total.	Bét.	
						Dofasli (1st class.)	Ekfasli (2nd class.)
1	Samrála.	Former ...	111	197	44,653	6,391	12,887
		Present ...	350	144	46,645	13,172	5,943
2	Ludhiana.	Former ...	2,172	1,414	43,979	10,232	46,414
		Present ...	4,593	462	46,593	12,442	43,212
3	Jagrón.	Former ...	328	107	14,009	1,702	7,467
		Present ...	1,331	53	16,657	4,388	5,743
4	Total.	Former ...	2,611	1,718	1,02,641	18,325	66,768
		Present ...	6,274	659	1,09,895	30,002	54,898

I.—(Continued.)

22	23	24	25	26	27	28
ASSESSMENT.—(Concluded)			SECTION II.—RESOURCES AND CAPABILITIES CONSIDERED IN DIFFERENT ASPECTS.			
AREA.			AREA AND PERCENTAGE (ON COLUMN 13).			
irrigated.						
Dhaia.		Total.	Irrigated.	Held by tenants who will pay in cash.	Held by tenants who will pay in kind.	Under rika rule.
Dakhar and Rousli (Louni.)	Bhur (sandy soil.)					
54,599	23,969	97,846	44,653 31P.C.	...	...	8,479 6P.C.
55,947	27,263	1,02,325	46,645 31P.C.	12,375 8P.C.	16,058 11P.C.	9,256 6P.C.
1,93,293	32,916	2,82,855	43,979 13P.C.	...	...	3,012
1,97,788	49,991	3,03,433	46,593 13P.C.	22,364 6P.C.	33,964 10P.C.	3,960 1P.C.
1,28,758	56,571	1,94,498	14,009 7P.C.	...	...	...
1,29,943	73,282	2,13,356	16,657 7P.C.	14,200 6P.C.	22,913 10P.C.	51
3,76,650	1,13,456	5,75,199	1,02,641 14P.C.	...	...	11,491 2P.C.
3,83,678	1,50,536	6,19,114	1,09,895 15P.C.	48,939 7P.C.	72,935 10P.C.	13,267 2P.C.

APPEN

Serial number.	Name of tahsil.	FORMER AND PRESENT STA- TISTICS COM- PARED.	29	30	31	32	33
			SECTION II.—RESOURCES AND CAPABILITIES				
			DETAIL OF AREA NOW UNDER THE VARIOUS				
			Irrigated or un- irrigated.	Rabi or Spring harvest.			
Crops on which kind rents are paid.		Crops on which cash rents are paid.		Total rabi.			
1st class (wheat.)	2nd class (other crops.)						
1	Samrāla.	Former ..	.....	...	...	...	...
		Irrigated ...		20,439	7 635	1,322	29,396
		Unirrigated		26,118	23,020	287	49,425
		Present ...	Total ...	46,557	30,655	1,609	78,821
2	Ludhiāna.	Former ...	.....	...	...	...	...
		Irrigated ...		24,020	9,969	3,003	36,992
		Unirrigated		37,004	1,38,159	1,643	1,76,~06
		Present ...	Total ...	61,024	1,48,128	4,646	2,13,798
3	Jagrān.	Former ...	...	...	...	...	...
		Irrigated ...		10,970	3,436	1,499	15,905
		Unirrigated		6,191	1,33,889	255	1,40,335
		Present ...	Total ...	17,161	1,37,325	1,754	1,56,240
4	Total.	Former ...	...	...	...	...	...
		Irrigated ...		55,429	21,040	5,824	82,293
		Unirrigated		69,313	2,95,068	2,185	3,66,556
		Present ...	Total ...	1,24,742	3,16,108	8,009	4,48,859

DIX I.—(Continued.)

34	35	36	37	38	39	40	41
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CONSIDERED IN DIFFERENT ASPECTS.—(Continued.)

CLASSES OF CROPS. (See APPENDIX IV.)						DETAIL SHOWING AGREEMENT OF AREAS CULTIVATED & CROPPED.	
Kharif or Autumn harvest.					Total of both harvests.	Total area cultivated and fallow (columns 12 and 13.)	Total area of crops.
Crops on which kind rents are paid.		Crops on which cash rents are paid.		Total kharif.			
1st class (maize and cotton.)	2nd class (other crops.)	1st class (sugar, in- digo and vegetables.)	2nd class (other crops.)				
...
16,749	1,353	6,381	2,788	27,271	56,667	...	...
7,162	30,338	3,229	15,417	56,146	1,05,571	...	...
23,911	31,691	9,610	18,205	83,417	1,62,238	1,50,431	1,62,238
...
23,676	1,057	3,159	3,212	31,104	68,096	...	...
10,277	72,636	1,188	45,162	1,29,263	3,06,069	...	...
33,953	73,693	4,347	48,374	1,60,367	3,74,165	3,53,005	3,74,165
...
9,936	644	170	1,515	12,265	28,170	...	...
1,698	64,283	15	9,180	75,176	2,15,511	...	...
11,634	64,927	185	10,695	87,441	2,43,681	2,31,442	2,43,681
...
50,361	3,054	9,710	7,515	70,640	1,52,933	...	...
19,137	1,67,257	4,432	69,759	2,60,585	6,27,151	...	...
69,498	1,70,311	14,142	77,274	3,31,225	7,80,084	7,34,878	7,80,084

APPEN

Serial number.	Name of taluk.	FORMER AND PRESENT STATIS- TICS COMPARED.	42	43	44	45	46	47
			SECTION II.—RESOURCES AND CAPABILITIES					
			DETAIL SHOWING AGREEMENT OF AREA CULTIVATED AND CROPPED.					
			Deductions.				Area of columns 12 and 13 actually cropped.	Ditto not cropped.
			Cultivated after measurement.	Twice area crop- ped three times.	Area cropped twice.	Total.		
1	Samrála.	Former ...	...	...	...	...	...	...
		Present ...	211	90	18,093	18,394	1,43,844	6,587
2	Ludhiana.	Former ...	...	...	...	...	...	...
		Present ..	250	1,080	34,018	35,348	3,38,817	14,188
3	Jagrón.	Former ...	...	...	...	...	...	...
		Present ...	722	711	16,576	18,009	2,25,672	5,770
4	Total.	Former ...	...	...	...	...	...	...
		Present ...	1,183	1,881	68,687	71,751	7,08,335	26,545

DIX I.—(Continued.)

48	49	50	51	52	53	54	55	56
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CONSIDERED IN DIFFERENT ASPECTS.—(Continued.)

SYSTEM OF CULTIVATION.					CLASSIFIED STATEMENT OF MASONRY WELLS.			
Dofasi Harsálá.	Dofasi Dos/11.	Ekfasi Harsálá.	Ekfasi Dosálá.	Total.	Núi.			
					One bucket.	Two buckets.	Three and four buckets.	Total.
...
41,737	80,072	20,052	7,109	1,48,970	633	475	...	1,108
...
42,427	2,35,713	67,750	4,136	3,50,026	1,422	693	38	2,153
...
16,891	1,38,280	73,997	845	2,30,013	430	439	81	950
...
1,01,055	4,54,065	1,61,799	12,090	7,29,009	5,485	1,607	119	4,211

APPEN

Serial number.	Name of tahsil.	FORMER AND PRESENT STATIS- TICS COMPARED.	57	58	59	60
			SECTION II.—RESOURCES AND CAPABILITIES			
			CLASSIFIED STATEMENT OF			
			Khalis.			
			One bucket.	Two buckets.	Three and four buckets.	Total.
1	Samrala.	Former ...	...	...	...	...
		Present ...	957	608	...	1,565
2	Ludhiana.	Former ...	...	...	...	...
		Present ...	648	262	5	915
3	Jagraon.	Former ...	...	...	...	...
		Present ..	148	107	25	280
4	Total.	Former
		Present ...	1,753	977	30	2,760

DIX I.—(Continued)

61	62	63	64	65	66	67
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CONSIDERED IN DIFFERENT ASPECTS.—(Continued.)

MASONRY WELLS.

Bet.			Total.			
One bucket.	Two buckets.	Total.	One bucket.	Two buckets.	Three and four buckets.	Total.
...	...	...	1,778	769	...	2,547
81	2	83	1,671	1,085	...	2,756
...	...	...	2,210	966	57	3,233
745	3	748	2,845	958	43	3,846
...	...	...	503	464	113	1,080
121	4	125	698	551	106	1,355
...	...	...	4,491	2,199	170	6,860
947	9	956	5,214	2,594	149	7,957

Serial number.	Name of tahsil.	FORMER AND PRESENT STATIS- TICS COMPARED.	68	69	70	71.
			SECTION II.—RESOURCES AND CAPABILITIES			
			WATER CAPACITY OF WELLS.			
			Average depth wells in feet to the water.	Average cost of con- struction of a well.	Number of yoke of oxen required per bucket.	Average of crops irri- gated annually by each well.
1	Samrāla.	Former ...	.....	Rs. ...	...	...
		Present ..	Bet 10 feet ... Dhaia 38 feet ...	100 350	2 4	9 21
2	Ludhiāna.	Former ...	.....	...	...	...
		Present ...	Bet 10 feet ... Dhaia 30 to 50 feet	100 300 to 550	2 4	11 19
3	Jagraon.	Former ...	.....	...	...	...
		Present ...	Bet 10 feet ... Dhaia 30 to 50 feet	100 300 to 550	2 4	20 21
4	Total.	Former
		Present	B. 12 D. 20

DIX I.—(Continued.)

72	73	74	75	76	77	78
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CONSIDERED IN DIFFERENT ASPECTS.—(Continued.)

CATTLE.		Number of ploughs.	POPULATION.			Average population per square mile of cultivation.
Number of plough and well cattle.	Other cattle.		1854.	1868.	1881.	
30,833	26,663	14,621	1,31,218	1,42,351	...	...
35,370	55,663	16,031	...	...	1,52,509	655
53,921	87,428	21,766	2,42,584	2,86,718	...	...
66,214	98,743	29,655	...	...	3,07,559	560
28,919	51,785	11,283	1,17,895	1,48,317	...	...
35,491	51,428	16,369	...	...	1,58,767	442
1,13,573	1,65,876	47,670	4,91,697	5,77,386	...	...
1,37,665	2,05,834	62,055	...	...	6,18,835	543

APPEN

Serial number.	Name of tahsil.	79	80	81	82	83
		SECTION III.—SUMMARY & REGULAR SETTLE				
		REGULAR SETTLEMENT OF 1842 AND SUMMARY SETTLEMENT OF 1847.			ASSESSMENT FOR THE WHOLE DISTRICT OF THE REGULAR SETTLEMENT (1850-1853).	
		Number of villages assessed.	Summary assessment.	Regular Settlement assessment for these villages.	Amount given by the revenue rates.	Sanctioned assessment.
1	Samrāla. {	205	2,50,872	1,99,317	2,96,346	K. 2,62,034 M. 3,821
		...	...	...	...	Total 2,65,855
2	Ludhiāna. {	349	3,38,185	3,25,811	5,07,358	K. 4,31,842 M. 16,187
		...	...	...	...	Total 4,48,029
3	Jagrāon. {	167	2,39,001	2,32,086	2,79,710	K. 2,34,659 M. 10,238
		...	...	...	...	Total 2,44,897
4	Total. {	721	8,28,058	7,57,214	10,83,414	K. 9,28,535 M. 30,246
		...	...	...	...	Total 9,58,781

DIX I.—(Continued.)

84	85	86	87	88	89
MENTS COMPARED.		SECTION IV.—ASSESSMENT NOW FIXED IN THE REVISED SETTLEMENT AS WORKED OUT FROM THE REVENUE RATES & PRODUCE ESTIMATES & AS FINALLY ANNOUNCED.			
Assessment of the year of our survey (1879).	Rate on cultivation of the sanctioned assessment.	ASSESSMENT RATES.			
		Irrigated.			
		Núi Chahi.	Khái Chái.	Chái Bét	Other irrigation.
2,61,871	1 13 10	.....	.....	...	...
...	...	3 0 0 to 4 12 0	3 0 0 to 3 8 0	4 0 0 to 4 8 0	3 0 0
4,30,281	1 5 11	.....	... ..	...	...
...	...	1 6 0 to 4 8 0	1 6 0 to 3 4 0	3 12 0 3 12 0	3 12 0
2,33,525	1 2 10	.....	.....	...	...
...	...	3 0 0 to 3 12 0	2 8 0 to 3 0 0	3 12 0	3 12 0
9,25,677	1 6 8	...	...	...	...
...

Serial number.	Name of tahsil.	90	91	92	93
		SECTION IV.—ASSESSMENT NOW FIXED IN THE PRODUCE ESTIMATES AND			
		ASSESSMENT RATES —(Continued.)			
		Unirrigated.			
		Dofasi Bét.	Eksali Bét.	Dákhār and Rousli.	Bhur.
1	Samrála.	...	...	...	...
		2 10 0 to	1 8 0 to	1 0 0 to	0 10 0 to
		3 0 0	1 12 0	1 6 0	0 14 0
2	Ludhiána.	...	...	...	...
		1 10 0 to	1 4 0 to	0 11 0 to	0 8 0 to
		2 12 0	1 12 0	1 6 0	0 14 0
3	Jagraón.
		1 10 0 to	1 4 0	1 0 0 to	0 10 0 to
		2 0 0		1 3 0	0 12 0
4	Total.
	

DIX I.—(Continued.)

94	95	96	97	98
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REVISED SETTLEMENT AS WORKED OUT FROM THE REVENUE RATES AND AS FINALLY ANNOUNCED.—(Continued.)

ASSESSMENT ON THE VARIOUS SOILS GIVEN BY RATES AND THE PRODUCE ESTIMATES COMPARED.

Assessments by revenue rates and produce estimates.	Irrigated.			
	Niái Cháhi.	Kháhi Cháhi.	Cháhi Béc.	Other irrigation.
Assessment by rates ...	76,236	1,04,698	20,29	
Produce estimate ...	85,362	1,03,248	2,604	
Assessment by rates ...	1,15,833	42,628	17,224	1,123
Produce estimate ...	1,35,760	48,195	24,102	
Assessment by rates ...	44,326	8,547	4,478	...
Produce estimate ...	49,107	9,405	8,359	...
Assessment by rates ...	2,36,395	1,55,873	23,731	1,423
Produce estimate ...	2,70,231	1,60,848	35,065	

APPEN

Serial number.	Name of tahsil.	Assessments by revenue rates and produce estimates.	99	100	101	102
			SECTION IV.—ASSESSMENT NOW FIXED RATES AND PRODUCE			
			ASSESSMENT ON THE VARIOUS SOILS GIVEN BY RATES AND THE PRODUCE ESTIMATES COMPARED — (Continued.)			
			Unirrigated.			
			Dofasli Bét.	Ektasli Bét.	Dákhar and Rousli.	Bhur.
1	Samrála.	Assessment by rates	35,426	10,366	74,523	20,376
		Produce estimate ...	44,498	11,280	77,544	19,606
2	Ludliána.	Assessment by rates	29,299	57,975	2,21,598	37,784
		Produce estimate ...	36,355	62,884	2,40,838	37,907
3	Jagrón.	Assessment by rates	2,843	9,773	1,53,472	54,840
		Produce estimate ...	8,779	6,428	1,63,169	55,936
4	Total.	Assessment by rates	67,568	78,114	4,49,593	1,13,000
		Produce estimate ...	89,632	80,592	4,81,551	1,13,449

REMARKS.—The details in this statement are taken from the Assessment Reports, minor correction of alterations by alluvion and diluvion since the Assessment Reports were submitted.

2. (Cols 79—81). Only the Khá sa villages were summarily assessed, and I have shown the number of

3. For an explanation of col. 83 see paragraph 300 of the Report.

4. These discrepancies between the figures of (cols. 103 and 106) are explained in the Report.

DIX I.—(Continued.)

103	104	105	106	107	108
IN THE REVISED SETTLEMENT AS WORKED OUT FROM THE REVENUE ESTIMATES AND AS FINALLY ANNOUNCED.—(Continued.)					
Total assessment given by the revenue rates sanctioned.	ASSESSMENT ACTUALLY ANNOUNCED WITH ITS RATE ON CULTIVATION.				
	Detail of assessment announced.			Rate on cultivation (columbus 13 and 106.)	Increased assessment with percentage (columbus 84 and 104.)
	Khálsa and Jágir.	Máfi.	Total.		
...
3,23,654	3,08,586	2,871	3,11,457	2 1 5	46,715 18 P. C.
...
5,23,764	5,11,852	9,464	5,21,316	1 7 10	81,571 19 P. C.
...
2,78,279	2,71,477	8,394	2,79,871	1 3 6	37,952 16 P. C.
...
11,25,697	10,91,915	20,729	11,12,644	1 8 5	1,66,238 18 P. C.

being made where necessary. The number of estates does not agree with that of Statement G. because these with their Summary and Regular Settlements, including in the Summary the Settlement of 1842.

STATISTICS OF RENT.

APPENDIX IIa.—(Form B. prescribed by the Rules.)

CLASSIFIED STATEMENT OF TENANTS' HOLDINGS.

—(Concluded.)

46

47

48

51

52

54

56

				AREA IN CULTIVATION OF TENANTS PAYING CASH IN ADDITION TO RENT IN KIND.							SUB-TENANTS.	
Right to share of produce.				Tenants with right of occupancy.			Tenants not having right of occupancy.			Total.	Holdings.	Area.
One-fourth.	Two-sevenths.	One-fifth.		Holdings.	Area.	Rent.	Holdings.	Area.	Rent.			
26	...	...	1,889	...	...	...	19	63	...	19	22	...
37	2	...	3,669	...	...	...	...	...	...	...	...	...
35	1	...	4,533	...	...	...	...	...	...	...	...	...
36	2	...	12,389	6	12	4	90	260	...	35	58	...
...
...
61	1	...	6,122	...	...	...	...	...	...	...	...	...
73	4	...	16,058	6	12	4	109	323	24	54	80	...
51	...	...	1,936	...	...	...	...	...	...	...	...	...
53	...	...	4,671	...	5	3	5	61	78	62	174	...
89	...	...	8,904	...	...	...	...	...	...	...	...	...
335	...	...	29,293	22	82	100	340	2,099	940	96	174	...
...
...
140	...	...	10,826	...	...	...	...	...	...	...	...	...
388	...	...	33,964	22	87	103	345	2,160	1,019	158	348	...
578	...	32	1,857	...	...	...	...	...	...	...	...	...
697	...	25	2,081	41	28	28	106	43	126	76	40	...
104	...	1	5,483	...	...	...	...	...	...	...	...	...
223	...	1	20,832	4	42	35	583	2,018	2,212	342	950	...
...
...	...	...	...	41	658	148	8	119	62	13	58	...
682	...	33	7,340	...	...	...	...	...	...	...	...	...
922	...	26	22,913	86	728	211	697	2,180	2,399	433	1,048	...
655	...	32	5,682	...	...	...	...	...	...	...	...	...
787	2	25	10,421	41	33	31	130	167	204	157	236	...
228	1	1	18,916	...	...	...	...	...	...	...	...	...
596	2	1	62,514	32	136	139	1,013	4,370	3,152	473	1,182	...
...
...	...	...	...	41	658	148	8	119	62	13	5	...
883	1	35	24,508	...	...	...	...	...	...	...	...	...
1,383	4	26	72,935	114	827	318	1,151	4,663	3,42	614	1,476	...

STATISTICS OF RENT.—(*Continued.*)

APPENDIX II.b.

CLASSIFIED STATEMENT OF TENANTS-AT-WILL PAYING
CASH RENTS.

APPEN

Classified Statement of tenants-

1	2	3	4	5	6	7
Serial number.	Name of tahsil.	LAND HELD BY TENANTS PAYING AT A RATE PER ADOPTED FOR				
		NIAT CHAHIL.		KHALIS CHAHIL.		BET
		Area.	Rent.	Area.	Rent.	Area.
1	Samrāla {	92	607	308	1,782	.....
		.....	6 9 6	.....	5 12 7	.....
2	Ludhiāna {	96	1,110	172	1,041	17
		.....	11 9 0	.....	6 0 10	.....
3	Jagrāon {	97	589	43	200	3
		.....	6 1 1	.....	4 10 1	.....
4	Total ... {	285	2,306	523	3,023	20
		.....	8 1 5	.....	5 12 6	.....

DIX IIb.

at-will paying cash rents.

8	9	10	11	12	13	14
---	---	----	----	----	----	----

BIGAH ARRANGED ACCORDING TO THE CLASSIFICATION OF SOILS
ASSESSMENT.

CHAH.	DOFASLI.		EKFASLI.		DAKHAR AND ROUSLI.	
Rent.	Area.	Rent.	Area.	Rent.	Area.	Rent.
.....	75	360	1	7	873	3,754
.....	.....	4 12 9	.....	.....	.....	4 4 1
85	6	14	185	291	1,702	6,986
0 5 0	.....	2 5 4	.....	1 9 2	.....	4 1 8
3	.....	.....	94	107	2,055	6,387
.....	.....	.....	.....	1 2 2	.....	3 1 8
88	81	374	280	405	4,630	17,127
4 6 4	.....	4 9 10	.....	1 7 1	.....	3 11 3

APPEN

Classified Statement of tenants-at-will

Serial number.	Name of tahsil.	15	16	17	18	19	20
		LAND HELD BY TENANTS PAYING AT A RATE PER BIGAH ARRANGED ACCORDING TO THE CLASSIFICATION OF SOIL ADOPTED FOR ASSESSMENT.—(Concluded.)					
		BRUR.		MIXED.		TOTAL.	
		Area.	Rent.	Area.	Rent.	Area.	Rent.
1	Samrāla }	67	134	387	2,044	1,803	8,688
		...	2 0 0	...	5 4 6	...	4 13 1
2	Ludhiāna }	96	383	858	4,079	3,132	13,989
		...	3 15 10	...	4 12 1	...	4 7 6
3	Jagrāon }	505	982	744	2,857	3,541	11,125
		...	1 15 1	...	3 1 4	...	3 2 3
4	Total }	668	1,499	1,989	8,980	8,476	33,802
		...	2 3 10	...	4 8 3	...	3 15 9

DIX IIb.

paying cash rents.—(Continued.)

21	22	23	24	25	26	27	28
PAYING (CHAKOTA) A LUMP SUM ON THE HOLDING FOR THE YEAR.							
NIAI CHAHL.		KHALIS CHAHL.		BET CHAHL.		OTHER IRRIGATION.	
Area.	Rent.	Area.	Rent.	Area.	Rent.	Area.	Rent.
291	2,732	499	3,902	...	.....	8	76
...	9 6 2	...	7 13 2	...	.....	...	9 8 0
212	2,251	66	609	43	347	7	108
...	10 9 10	...	9 3 8	...	8 1 1	..	15 6 10
166	1,547	27	226	2	14	...	.....
...	9 5 1	...	8 5 11	...	7 0 0	...	.....
669	6,580	592	4,737	45	361	15	184
...	9 12 2	...	8 0 0	...	8 0 4	...	12 4 3

APPEN

Classified Statement of tenants-at-will

Serial number.	Name of tahsil.	29	30	31	32	33	34
		PAYING (CHAKOTA) A LUMP SUM ON					
		DOFASLI.		EKFASLI.		DAKHAR ROUSLI.	
		Area.	Rent.	Area.	Rent.	Area.	Rent.
1	Samrála }	227	1,381	77	328	565	2,518
		...	6 1 4	...	4 4 1	...	4 7 3
2	Ludhiána }	163	605	785	1,827	1,471	5,566
		...	3 11 4	...	2 3 2	...	3 12 6
3	Jagrón }	37	127	111	344	1,818	6,877
		...	3 6 11	...	3 1 7	...	3 12 6
4	Total }	427	2,113	973	2,499	3,854	14,961
		...	4 15 11	...	2 9 1	.....	3 14 1

DIX IIb.

paying cash rents.—(Continued.)

35	36	37	38	39	40
----	----	----	----	----	----

THE HOLDING FOR THE YEAR.—(Concluded.)

BURR.		MIXED.		TOTAL.	
Area.	Rent.	Area.	Rent.	Area.	Rent.
63	115	3,348	15,466	5,078	26,518
.....	1 13 2	.....	5 9 10	.....	5 3 6
378	1,005	7,724	34,363	10,849	46,681
.....	2 10 6	.....	4 7 2	.....	4 4 10
1,281	3,576	4,232	15,229	7,674	27,940
.....	2 12 7	.....	3 9 6	.....	3 1 5
1,722	4,696	15,304	65,058	23,601	1,01,139
.....	2 11 1	.....	4 4 0	.....	4 4 6

APPEN

Classified Statement of tenants-at-will

Serial number.	Name of tahsil.	41	42	43	44	45	
		PAYING (ZABTI) CASH RENTS ON					
		Name of crop.	NIAT CHAH.		KUALIS CHAH.		
			Area.	Rent.	Area.	Rent.	
1	Samrāla	Sugarcane ...	139	1,656	143	1,672	
		...	...	11 14 7	...	11 11 0
		Cotton ...	28	200	40	263	
		...	...	7 6 0	...	6 9 2
		Wheat ...	7	64	19	103	
		...	...	9 2 3	...	5 6 9
		Wheat & Gram...	...	.....	...	.....
		
Maize ...	28	285	26	240			
...	...	10 2 10	...	9 3 8			
Charri ...	2	11	32	151			
...	...	5 8 0	...	4 11 6			
Others ...	5	24	8	19			
...	...	4 12 9	...	6 5 4			
2	Ludhiāna	Sugarcane ...	142	2,170	107	1,512	
		...	...	15 4 6	...	14 6 7
		Cotton ...	55	500	25	217	
		...	...	9 1 5	...	8 10 10
		Maize ...	140	1,715	29	242	
		...	...	12 4 0	...	8 5 6
		Charri & Moth ...	18	121	46	119	
...	...	6 11 6	...	2 9 4			
Others ...	17	149	8	115			
...	...	8 12 3	...	14 6 0			
3	Jagraon ...	Others ...	1	4	...	.....
4	Total ...	Sugarcane ...	281	3,826	250	3,214	
		...	...	13 9 10	...	12 13 8
		Cotton ...	83	700	65	480	
		...	...	8 8 0	...	7 6 2
		Wheat ...	7	64	19	103	
		...	...	9 2 3	...	5 6 10
		Wheat & Gram...	...	.....	...	.....
		
		Maize ...	168	2,000	55	482	
		...	...	11 14 6	...	8 12 3
		Charri ...	2	11	32	151	
		...	...	5 8 0	...	4 10 3
Charri & Moth ...	18	121	46	119			
...	...	6 7 11	...	2 7 3			
Others ...	23	177	11	134			
...	...	7 11 2	...	12 2 11			

DIX IIb.

paying cash rents.—(Continued.)

46	47	48	49	50	51	52	53	54	55
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THE CROPS CULTIVATED.

BET CHAHL.		OTHER IRRIGATION.		DOFASLI.		ERFASLI.		DAKHAR AND ROUSLI.	
Area.	Rent.	Area.	Rent.	Area.	Rent.	Area.	Rent.	Area.	Rent.
1	11	...	.....	242	2,736	6	65	7	56
...	11 4 11	...	10 13 4	...	8 0 0
...	2	23	...	.....	19	97
...	11 8 0	...	.....	...	5 1 8
...	22	124
...	5 1 2
...	17	94
...	2	15	...	.....	...	5 8 5
...	7 8 0	1	18	1	7
...	2	5	6	14	...	.....
...	2 8 0	...	2 5 4	456	2,034
...	...	2	10	1	7	...	.....	...	4 7 4
...	...	5	0 0	...	.....	...	.....	21	80
...	3 12 11
...	55	488	8	70	...	.....
...	8 13 11	...	8 12 0	...	.....
...	1	5	...	.....	4	22
...	11	89	...	.....	...	4 8 0
...	8 1 5	...	.....	...	.....
...	3	...	.....	8	29	40	53	1,255	5,595
1	7	...	.....	...	3 10 0	...	1 5 2	...	4 7 4
...	30	146
...	4 13 10
...
1	11	...	.....	297	3,224	14	135	7	56
...	10 13 8	...	9 10 3	...	8 0 0
...	1	...	.....	3	28	...	.....	23	119
...	9 5 4	...	.....	...	5 2 3
...	22	124
...	5 10 3
...	17	94
...	13	104	1	18	...	5 8 6
...	8 0 0	...	.....	1	7
...	2	5	6	14	456	2,034
...	2 8 0	...	2 5 4	...	4 7 4
...	3	...	.....	8	29	40	53	1,255	5,595
1	7	2	10	1	3 10 0	...	1 5 2	...	4 7 4
...	7	...	.....	51	226
...	4 6 11

APPENDIX IIb.

Classified Statement of tenants-at-will paying cash rents.—(Concluded.)

Serial number.	Name of tahsil.	Name of crop.	56	57	58	59	60	61
			PAYING (ZABTI) CASH RENTS ON THE CROPS CULTIVATED.—(Concluded.)					
			BRUR.		MIXED.		TOTAL.	
			Area.	Rent.	Area.	Rent.	Area.	Rent.
1	Samrála	Sugarcane ...	...	.....	...	...	538	6,196
		Cotton ...	...	.....	...	...	11 2 4	583
		Wheat ...	...	.....	...	...	6 9 11	291
		Wheat & Gram ...	...	.....	...	...	6 1 0	94
		Maize ...	...	.....	...	...	5 8 5	565
		Charri ...	9	33	...	...	9 11 10	2,248
		Others ...	13	3 10 8	...	...	4 6 11	166
			...	2 0 0	...	...	3 11 0	
2	Ludhiána	Sugarcane ...	...	.....	...	...	312	4,270
		Cotton ...	...	.....	...	...	13 10 11	745
		Maize ...	...	.....	...	...	8 12 3	2,046
		Charri & Moth ...	230	1,016	...	...	11 11 5	6,936
		Others ...	...	4 6 8	...	...	4 5 6	447
			8	30	...	...	6 15 9	
			...	3 12 0	...	...
3	Jagraón ...	Others ...	...	.....	...	...	1	4
4	Total ...	Sugarcane ...	...	.....	...	...	850	10,466
		Cotton ...	...	.....	...	...	112 5 0	1,328
		Wheat ...	...	.....	...	...	17 10 8	291
		Wheat & Gram ...	...	.....	...	...	6 1 0	94
		Maize ...	...	.....	...	...	5 8 6	2,611
		Charri ...	9	33	...	...	10 15 6	2,248
		Charri & Moth ...	230	1,016	...	...	4 6 11	6,936
		Others ...	...	4 6 8	...	...	4 5 6	617
			21	56	...	...	5 9 9	
			...	2 10 6	...	...

STATISTICS OF PRODUCE.

APPENDIX III.

SHOWING THE RESULTS OF THE EXPERIMENTS MADE TO
DETERMINE THE RATES OF YIELD OF THE
VARIOUS CROPS AND THE RATES
ADOPTED IN THE PRODUCE
ESTIMATES.

APPEN

Abstract Statement showing, for the principal Crops, the average rates as assumed in the produce estimates, and the area

1	2	3	4	5	6
Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	RABI CROPS RE			
		WII			
		Niái Cháhi.		Khális Cháhi.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ...	...	...	...	...
	Lower Dhaia ...	393	400	287	400
	Upper Dhaia ...	753 6·3 44·8	600	617 3·4 62·1	500
Ludhiána.	Bét Kacha I ...	...	...	...	...
	Bét Packa I ...	...	...	...	...
	Bét II ...	...	...	...	...
	Lower Dhaia ...	455 9·5	400	428 5·8	400
	Upper Dhaia ...	665 40·7	480	690 18·6	560
	Pawádh ...	641 15·8	480	387 8·4	560
	Tihára ...	521 24·5	440	500 17·6	520
	Jangal ...	503 3·7	400	698 1·4	400
Jagrón.	Bét ...	686 1·2	400	...	480
	Lower Dhaia ...	626 6·	400	638 1·4	480
	Upper Dhaia ...	674 84·7	440	649 5·8	520

REMARKS.—The figures below the line are the areas on which experiments were made.

DIX III.

of yield in seers for each class of land, as given by experiments and of experiments in acres and decimals of an acre.

7	8	9	10	11	12	13	14
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SULTS FOR 1879—82.

EAT.

Bét Cháhi.		Dofasli.		Ekfasli.		Mixed Dofasli and Ekfasli.	
By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.
518 3.	480	275 36.5	240	111 2.4	...	279 26.2	...
...
...
...	...	...	320	552 4.2	320	...	...
931 3.1	400	266 4.6	280	274 23.4	240	270 14.9	...
353 5.9	400	311 8.1	220	260 46.1	220	354 10.	...
385 2.	400	300 6.7	240	295 3.6	220	405 4.6	...
...
...
...
...
...
151 1.2	400	287 14.6	240	205 49.2	220	233 7.7	...
290 3.	400	461 1.1	240	288 7	220	...	...
...

APPENDIX

Abstract Statement showing, for the principal Crops, the average rates as assumed in the produce estimates and the area

Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	15	16	17	18
		RABI CROPS RE			
		WHEAT.—(Continued.)			
		Dakhar and Ronsli.		Bhur.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ... ..	...	...	...	...
	Lower Dhaia ... ..	...	160	194	120
	Upper Dhaia	365	240	25·6 301	160
		18·6		5·3	
Ludhiána.	Bét Kacha I ... ..	...	...	...	...
	Bét Packa I ... ..	...	...	...	...
	Bét II ... ..	...	...	...	...
	Lower Dhaia	283	160	...	120
	Upper Dhaia	298	240	...	160
	Pawádh	239	240	...	160
	Tihára	381	220	...	160
	Jangal	243	220	...	160
		8·			
Jagrón.	Bét ... ..	...	150	...	110
	Lower Dhaia ... ..	...	150	117	110
	Upper Dhaia ... ..	...	200	16·2 ...	150

III.—(Continued.)

of yield in seers for each class of land, as given by experiments and of experiments in acres and decimals of an acre.

19	20	21	22	23	24	25	26
----	----	----	----	----	----	----	----

SULTS FOR 1879—82.—(Continued.)

BARLEY.							
Niáí Cháhi.		Khális Cháhi.		Bét Cháhi.		Dakhar and Rousli.	
By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.
...	...	...	...	...	...	357	240
...	...	...	...	...	...	3.5	...
486	600	595	...	...	...	...	...
3.6	...	...	...	...	...	...	...
...
...
...	...	...	...	451	400	...	...
628	400	149	400	1.5	...	...	...
1.4	...	...	...	863	...	...	120
551	480	338	560	...	...	...	160
12.6	...	1.2	...	...	...	...	...
579	480	...	560	...	...	296	160
2.1	...	...	...	...	...	1.	...
613	440	...	520	...	...	...	160
4.9	...	...	...	...	...	201	140
...	...	...	...	...	...	9.	...
233	400	...	480	...	...	...	...
...
730	400	396	...	...	...	...	...
2.	...	...	...	...	...	...	...
783	440	457	520	...	...	454	200
4.7	...	1.4	...	...	...	1.	...

APPENDIX

Abstract Statement showing, for the principal Crops, the average rates as assumed in the produce estimates and the area

Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	27	28	29	30
		RABI CROPS RE			
		BARLEY.—(contd.)		GR	
		Bhur.		Dakhar and Rousli.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ... ..	...	...	...	...
	Lower Dhaia ..	...	...	159	...
	Upper Dhaia ...	...	...	225 13·8	240
Ludhiána.	Bét Kacha I ...	...	...	...	...
	Bét Packa I ...	...	...	...	...
	Bét II ... ..	...	...	...	...
	Lower Dhaia ...	...	100	173 8·5	200
	Upper Dhaia ...	144	120 6	217 6·2	280
	Pawádh ... ..	...	120	294 5·2	260
	Tihára ... ..	...	120	298 13·1	240
	Jangal ... ..	...	100	301 19·5	200
Jagrón.	Bét	140	5 ...	...	...
	Lower Dhaia ...	...	...	192	100
	Upper Dhaia ...	142 5·8	150	179 4·8	240

III.—(Continued.)

of yield in seers for each class of land, as given by experiments and of experiments in acres and decimals of an acre.

31	32	33	34	35	36	37	38
----	----	----	----	----	----	----	----

SULTS FOR 1879-82.

AM.		(" BERRA ") WHEAT AND GRAM.				BARLEY & GRAM.	
Bhur.		Dakhar and Rousli.		Bhur.		Dakhar and Rousli.	
By Experiment.	Assumed.	By Experiment	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.
...
...	...	220	...	133	...	...	...
258	...	346	300	130	...	217	300
5 5		27 5		8 8		13 9	
...
...
...
152	120	289	240	269	140	...	...
3 3		67 3		84 3		...	...
...	180	363	320	179	180	245	320
...		130 4		62 3		9 4	
123	160	273	260	152	160	433	260
3 5		64 5		11 4		3 6	
148	140	312	280	231	160	236	280
1 6		100 2		43 4		10 8	
159	140	208	240	..	160	306	260
34 7		18 8				92 3	
...	...	...	...	180	140	...	...
...		...		23 7		...	
113	120	205	220	181	140	...	200
40 6		9 5		93 5		...	
100	140	369	320	188	180	388	320
6 8		215 2		38 3		7 4	

APPENDIX

Abstract Statement showing for the principal crops the average rates as assumed in the produce estimates and the area

Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	39	40	41	42
		RABI CROPS RE			
		BARLEY AND GRAM.— (Continued).		"SAR	
		Bhur.		Dakhar and Rousli.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ... ..	...	...	...	...
	Lower Dhaia	121	120	...	...
	Upper Dhaia .. ...	...	...	...	...
Ludhiana.	Bét Kacha I ... ..	...	...	...	...
	Bét Packa I ... ..	...	...	...	...
	Bét II ... ..	...	...	...	...
	Lower Dhaia ... ..	...	...	187	120
	Upper Dhaia	244	180	374	220
	Pawádh	289	160	596	220
	Tihára	156	160	428	200
	Jangal	333	180	213	180
		29·8		23·3	
Jagrón.	Bét ... ..	...	...	...	...
	Lower Dhaia	127	140	...	...
	Upper Dhaia	284	200	423	...
		24·6		23·4	

III.—(Continued.)

of yield in seers for each class of land as given by experiments and of experiments in areas and decimals of an acre.

43 44 45 46 47 48 49 50

SULTS FOR 1879-82.

RON" (RAPE).		" MASAR."				BARLEY & "MASAR."	
Bhur.		Dofasli.		Ekfasli.		Ekfasli.	
By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.
...	...	...	...	79 10·2	200	...	...
...
...
...	...	...	...	...	...	...	240
...	...	...	...	...	...	229	200
...	...	399 1·7	200	133 10·8	200	535 2·5	200
100 1·5	100	...	...	...	...	...	...
60 4·4	140	...	...	...	...	...	...
...	140	...	...	...	...	...	...
87 3·1	120	...	...	...	...	...	...
47 ·2	120	...	...	...	...	...	...
...	...	43 4·5	120	71 1·7	120	170 1·2	120
...
285 5·4	...	...	..	...	...	...	...

APPENDIX

Abstract Statement showing, for the principal Crops, the average rates as assumed in the produce estimates and the area

Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	51	52	53	54
		KHARIF			
		UNCLEAN			
		Niái Cháhi.		Khális Cháhi.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ... ..	...	...	...	...
	Lower Dhaia	170	200	193	200
	Upper Dhaia	331	260	259	220
Ludbiána.		2.5		.5	
		6.7		14.2	
	Bét Kacha I ... ..	...	...	...	...
	Bét Packa I .. ...	...	...	...	...
	Bét II ... ..	...	...	...	...
	Lower Dhaia ... ..	...	200	...	200
	Upper Dhaia	382	280	257	240
	Pawádh	410	300	...	260
Jagrón.	Tihára	259	240	89	200
	Jangal ... ..	...	...	...	...
		5.5		7.1	
Jagrón.	Bét ... ..	...	200	...	180
	Lower Dhaia ... ..	...	200	...	180
	Upper Dhaia	113	220	133	200
		1.1		.7	

APPENDIX

Abstract Statement showing, for the principal Crops, the average rates as assumed in the produce estimates and the area

Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	63	64	65	66
		KHARIF			
		MAI			
		Niái Cháhi.		Khális Cháhi.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ... ..	...	...	...	...
	Lower Dhaia	830	480	776	480
	Upper Dhaia	893	800	673	600
		4.5 30.8		1. 13.5	
Ludhiána.	Bét Kacha I ... ..	...	...	...	...
	Bét Packa I ... ..	...	...	...	...
	Bét II ... ..	...	...	...	...
	Lower Dhaia ... ..	...	600	...	600
	Upper Dhaia	1,052	800	656	600
	Pawádh	995	800	...	600
	Tihára	1,224	880	956	680
	Jangal ... ..	...	...	...	...
		54.7 16. 23.6		6.9 1.1	
Jagraón.	Bét	1,535	720	...	600
	Lower Dhaia	1,129	720	...	600
	Upper Dhaia	1,172	880	826	680
		1.9 2.7 23.7		5.5	

III.—(Continued.)

of yield in seers for each class of land, as given by experiments and of experiments in acres and decimals of an acre.

67	68	69	70	71	72	73	74
----	----	----	----	----	----	----	----

CROPS 1879—81.—(Continued.)

ZE.						"JOAR" (MILLET.)	
Bét Cháhi.		Dofasli.		Ekfasli.		Ekfasli.	
By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.
366 1·2	480	269 9·1	300	...	...	...	...
...
...
...	...	...	360	...	300	...	...
469 2·2	560	551 4·9	340	...	280	219 1·3	160
647 11·9	520	464 8·6	240	346 4·1	240	111 8·	160
633 6·8	520	192 1·	300	...	240	71 3·3	160
...
...
...
...
1,185 2·7	800	340 4·5	280	850 3	240	...	...
510 4·5	800	380 1·	280	...	240	...	...
...

APPENDIX

Abstract Statement showing, for the principal Crops, the average rates as assumed in the produce estimates and the area

Name of Tahsil.	NAME OF ASSESSMENT CIRCLE.	75	76	77	78
		KHARIF			
		"JOAR" (MILLET).— (Concluded.)		"MOTH," "MUNG,"	
		Dakhar and Rousli		Dakhar and Rousli.	
		By Experiment.	Assumed.	By Experiment.	Assumed.
Samrála.	Bét ... ..	...	...	...	...
	Lower Dhaia ... ..	...	...	102	120
	Upper Dhaia ... ..	...	...	157	160
				123	160
Ludhiána.	Bét Kacha I ... ..	...	...	...	...
	Bét Packa I ... ..	...	...	...	...
	Bét II ... ..	...	...	...	...
	Lower Dhaia ... ..	...	...	90	120
	Upper Dhaia	146	200	131	150
	Pawádh	84	200	117	140
	Tihára	115	160	142	140
	Jangal ... ..	...	...	134	140
			
Jagrón.	Bét ... ..	...	...	...	...
	Lower Dhaia ... ..	...	...	155	120
	Upper Dhaia	409	240	116	150

III—(Concluded.)

of yield in seers for each class of land, as given by experiments and of experiments in acres and decimals of an acre.

79	80	81	82	83	84	85	86
----	----	----	----	----	----	----	----

CROPS, 1879—81.—(Concluded.)

&c., &c. (PULSES)		"JOAR," "BAJRA" SOWN WITH "MOTH," "MUNG," &c.					
Bhur.		Khālis Chāhi.		Dakhar and Rousli.		Bhur.	
By Experiment.	Assumed.	By Experiment.	Assumed.	By Experiment.	Assumed.	By experiment.	Assumed.
...
91	100	...	...	67	...	...	...
28				9	8		
100	120	113	...	...	...	...	...
44		6					
...
...
...
120	100	...	...	112	120	...	100
5	5			7	7		
120	110	...	...	149	160	46	100
47	1			86	8	4	3
99	110	...	...	69	...	72	...
15	2			57		10	6
139	110	...	...	192	180	...	...
9	5			78	5		
272	110	...	...	219	160	115	120
35	4			206	2	52	9
...
68	100	...	...	112	120	...	100
5	5			8	8		
145	120	...	...	321	180	157	120
10	6			110	5	17	

STATISTICS OF PRODUCE.—(*Continued.*)

APPENDIX IV.

PRODUCE AND HALF-ASSET ESTIMATE.

APPEN

Statement showing the acreage and estimated yield of each crop, the value of this at which Government would be entitled at half the rent

1	2	3	4	5	6	7	8	9	10	11
Name of Tahsil.	DETAIL.	RABI								
		CROPS ON WHICH KIND RENTS								
		I Class.	II							
		Wheat.	Barley.	Gram.	Wheat and Gram.	Barley and Gram.	Masur.	Barley and Masur.	Sarron.	Masur and Peas.
	Price (seers per rupee) ...	30	40	35	33	38	27	38	20	...
Bandra	Area ...	48,557	5,599	4,432	14,708	4,358	319	395	696	...
	Gross produce ...	4,07,556	54,235	28,615	1,02,996	36,335	1,602	1,975	5,214	...
	Value of the same ...	5,43,408	54,235	32,702	1,24,773	58,243	1,731	2,079	10,430	...
	Price (seers per rupee) ...	30	40 to 45	35 to 42	33 to 40	37 to 45	20 to 25	...	...	38 to 40
Indiana.	Area ...	61,024	14,729	13,045	77,991	31,173	...	1,745	6,283	289
	Gross produce ...	5,01,019	99,114	71,085	5,03,475	1,95,490	...	8,987	30,233	1,839
	Value of the same ...	6,68,018	97,939	75,073	5,96,381	1,82,969	...	9,710	55,211	1,918
	Price (seers per rupee) .	30	40	38	35	40	40	...	22	...
Jagron.	Area ...	17,161	4,032	13,517	98,798	18,161	...	...	127	1,081
	Gross produce ...	1,52,261	31,844	50,450	5,85,538	1,28,600	...	...	726	3,243
	Value of the same ...	2,03,011	31,844	53,105	6,60,186	1,28,600	...	...	1,319	3,243
Total.	Area ...	1,24,712	24,360	30,994	1,91,495	53,692	319	2,140	7,166	1,370
	Gross produce ...	10,80,536	1,85,193	1,50,150	11,92,009	3,60,425	1,602	10,962	38,173	5,062
	Value of the same ...	14,14,437	1,84,018	1,60,850	13,90,340	3,49,815	1,731	11,795	66,980	5,161

DIX IV.

the average of prices during the last twenty years, and the value of the share to ordinarily taken by a proprietor from his tenants.

12	13	14	15	16	17	18	19	20	21	22
----	----	----	----	----	----	----	----	----	----	----

HARVEST.

ARE PAID.					DETAIL.	CROPS ON WHICH CASH RENTS ARE PAID.				Half asset estimate.
Class.			Total.	Half asset estimate.		Tobacco.	Vegetables.	Others.	Total.	
Gram and Saron.	Methe and Senji (Green fodder.)	Others.								
...	...	40	...	...		...	...	...	...	...
...	...	150	77,212	...	Area ...	195	1,208	206	1,009	...
...	...	748	...	...	Average rent ...	Rs. 5	Rs. 5	Rs. 3 to 5	...	...
...	...	748	8,08,367	1,44,148	Total rent ...	975	6,040	876	7,891	3,945
30 to 35	...	40 to 50	...	...		...	...	...	...	...
492	2,318	63	2,09,152	...	Area ...	691	3,729	226	4,646	...
2,348	...	418	...	...	Average rent ...	Rs. 2 to 5	Rs. 2 to 4	Rs. 2 to 4	...	...
2,683	...	390	1,69,029	3,11,070	Total rent ...	3,045	11,844	808	15,697	7,850
...	...	22	...	...		...	...	...	...	...
...	1,006	3	1,54,486	...	Area ...	530	1,221	...	1,754	...
...	...	15	...	...	Average rent ...	Rs. 4	Rs. 4	...	...	...
...	...	27	10,90,335	2,04,306	Total rent ...	2,120	4,806	...	7,016	3,508
492	3,924	216	4,40,850	...	Area ...	1,416	6,161	432	8,009	...
2,348	...	1,181	...	...	Average rent ...	...	...	...	...	...
2,683	...	1,155	35,88,885	6,59,524	Total rent ..	6,140	22,780	1,684	30,404	15,303

IV.—(Continued.)

the average of prices during the last twenty years, and the value of the share to ordinarily taken by a proprietor from his tenants.

31	35	36	37	38	39	40	41	42	43	44	45
----	----	----	----	----	----	----	----	----	----	----	----

HARVEST.

DETAIL.	CROPS ON WHICH CASH RENTS ARE PAID.							Total.	Half asset estimate.	TOTAL HALF ASSET ESTIMATE.	
	I Class.			II Class.						On account of harvests.	Amount.
	Sugarcane.	Indigo.	Vegetables.	Charri (fodder.)	San.	Guara.	Others.				
...
Area ...	9,256	287	67	15,350	702	...	2,153	27,815	...	Rabi ...	1,48,093
Average rent	Rs. 6 to 12	Rs. 10	Rs. 5	Rs. 1 to 4	Rs. 2 to 4	..	Rs. 3 to 5	...	...	Kharif	1,96,039
Total rent ...	1,10,437	2,870	333	57,866	2,652	...	9,538	1,83,698	91,782	Total ...	3,44,182
...
Area ...	3,960	336	51	45,365	2,983	...	26	62,721	...	Rabi ...	3,18,920
Average rent	Rs. 7 to 14	Rs. 3 to 6	Rs. 2 to 4	Rs. 1 to 4	Rs. 1 to 4	...	Rs. 3 to 4	...	...	Kharif	2,67,124
Total rent ...	47,511	1,998	186	1,43,168	8,785	...	102	2,01,730	1,00,868	Total ...	5,86,044
...
Area ...	51	2	132	8,080	1,514	463	58	10,890	...	Rabi ...	2,07,614
Average rent	Rs. 8	Rs. 8	Rs. 4	...	Rs. 2 to 4	...	Rs. 3 to 4	...	...	Kharif	93,369
Total rent ...	408	16	528	...	3,708	...	113	4,803	2,402	Total ..	3,01,183
Area ...	13,267	625	250	69,395	5,199	463	2,217	91,416	...	Rabi ..	6,74,827
Average rent	...	...	...	...	...	..	...	...	...	Kharif	5,56,532
Total rent ...	1,58,356	4,872	1,049	2,01,026	15,145	...	9,783	3,90,231	1,95,052	Total ...	12,31,359

STATISTICS OF TRANSFER OF LAND.

APPENDIX Va.

SALES SINCE THE REGULAR SETTLEMENT OF 1850.

(From the Patwaris' papers).

APPEN

Statement showing the sales of land as ascertained to have

1	2	3	4	5	6	7	8	9	10	11
Serial number.	Name of taluk.	DETAIL.	TO AGRICULTURISTS OF THE VILLAGE.				TO AGRICULTURISTS OF THE OTHER VILLAGES.			
			No. of holdings.	Area in acres.	Assessment.	Price.	No. of holdings.	Area in acres.	Assessment.	Price
1	Samāla.	Total transactions ...	365	1,615	2,655	43,176	69	311	482	9,645
		Average of assessment per acre ...	...	...	1-10-4	...	...	...	1-8-10	...
		Average price per acre.	...	...	...	27	...	...	...	31
		Average price per rupee of revenue ...	...	...	...	16	...	...	...	20
2	Ludhiāna.	Total transaction ...	699	3,017	4,051	1,60,907	264	2,120	2,759	75,004
		Average of assessment per acre ...	...	...	1-5-6	...	...	...	1-4-10	...
		Average price per acre.	...	...	...	33	...	...	...	35
		Average price per rupee of revenue ...	...	...	...	25	...	...	...	27
3	Mūlān.	Total transaction ...	567	2,220	2,420	91,407	82	1,423	1,403	15,831
		Average of assessment per acre ...	...	...	1-1-5	...	...	...	0-15-9	...
		Average price per acre.	...	...	...	41	...	...	...	11
		Average price per rupee of revenue ...	...	...	...	33	...	...	...	11
4	Total.	Total transaction ...	1,632	6,852	9,126	2,35,490	406	3,854	4,644	1,00,480
		Average of assessment per acre ...	...	...	1-5-4	...	...	...	1-3-3	...
		Average price per acre.	...	...	...	34	...	...	...	26
		Average price per rupee of revenue ...	...	...	...	26	...	...	...	22

DIX Va.

taken place since the Regular Settlement (1850-53).

12	13	14	15	16	17	18	19	20	21
TO OTHER PERSONS.				TOTAL.				Percentage of total area with incidence per acre of expired settlement.	REMARKS.
No. of holdings.	Area in acres.	Assessment.	Price.	No. of holdings.	Area in acres.	Assessment.	Price.		
495	1,896	2,412	45,714	920	3,822	5,540	98,535	2	The averages in Column 11 are low, because the principal item is a whole village transferred immediately after the Regular Settlement at a nominal price.
...	...	1-4-1	...	...	...	1-7-3	...	1-13-10
...	...	...	24	...	...	...	25	...
...	...	...	19	...	...	...	18	...
500	2,349	3,320	1,28,377	1,463	7,486	10,130	3,04,288	2	
...	...	1-6-7	...	...	...	1-5-8	...	1-5-11
...	...	...	55	...	...	...	41	...
...	...	...	39	...	...	...	30	...
229	1,468	1,624	48,724	878	5,111	5,417	1,55,962	2	
...	...	1-1-9	...	...	...	1-1-1	...	1-2-10
...	...	...	33	...	...	...	31	...
...	...	...	30	...	...	...	29	...
1,224	5,713	7,356	2,22,815	3,261	16,419	21,126	5,58,785	2	
...	...	1-5-6	...	...	...	1-4-7	...	1-6-8
...	...	...	39	...	...	...	34	...
...	30	26	...	

STATISTICS OF TRANSFER OF LAND.

APPENDIX Vb.

SHOWING MORTGAGES OF LAND AT THE TIME OF THE
REGULAR SETTLEMENT AND NOW ACCORDING
TO THE PATWARIS' PAPERS.

APPEN

Statement showing the land Mortgaged at the

1	2	3	4	5	6	7
Serial number.	Name of taluk.	DETAIL.	FORMER MORTGAGES.			
			No. of holdings.	Acres.	Assessment.	Mortgage money.
1	Samrála.	Total transactions ...	72	551	751	4,280
		Rate of assessment per acre ...	...	...	1 5 9	...
		Average price per acre ...	...	...	...	8
		Average price per rupee of revenue ...	...	...	...	6
2	Ludhiána.	Total transactions ...	148	1,412	1,235	13,079
		Rate of assessment per acre ...	...	...	0 13 8	...
		Average price per acre ...	...	...	...	1
		Average price per rupee of revenue ...	...	...	...	11
3	Jagrón.	Total transactions ...	82	497	516	1,734
		Rate of assessment per acre ...	...	...	1 0 8	...
		Average price per acre ...	...	...	...	3
		Average price per rupee of revenue ...	...	...	...	3
4	Total.	Total transactions ...	302	2,490	2,502	19,093
		Rate of assessment per acre ...	...	...	1 0 1	...
		Average price per acre ...	...	...	...	8
		Average price per rupee of revenue ...	...	...	...	8

DIX Vb.

date of the former and present Settlement.

8	9	10	11	12	13	14	15
PRESENT MORTGAGES.							
MORTGAGES WITH POSSESSION.							
Mortgaged to Agriculturists of the village.				Mortgaged to Agriculturists of other villages.			
No. of hold- ings.	Acrea.	Assessment.	Mortgage money.	No. of hold- ings.	Acrea.	Assessment.	Mortgage money.
1,232	3,691	6,652	91,108	328	865	1,503	22,988
...	...	1 12 10	...	...	...	1 11 10	...
...	...	...	25	...	...	...	27
...	...	...	14	...	...	:	15
3,514	11,952	13,684	41,450	761	3,250	4,198	1,10,133
...	...	1 2 4	...	...	...	1 4 8	...
...	...	...	34	...	...	...	34
...	...	...	29	...	...	...	26
4,267	10,598	11,583	3,82,704	1,054	4,607	5,107	1,42,303
...	...	1 1 6	...	...	...	1 1 9	...
...	...	...	36	...	...	...	31
...	...	...	33	...	...	...	28
9,013	26,241	31,919	8,75,262	2,146	4,812	10,808	2,75,424
...	...	1 3 6	...	...	...	1 3 10	...
...	...	...	33	...	...	...	32
...	...	...	27	...	...	...	25

APPENDIX

Statement showing the land Mortgaged at the

Serial number.	Name of tahsil.	DETAIL.	16	17	18	19
			PRESENT			
			MORTGAGES WITH			
			Mortgaged to other persons.			
			No. of hold- ings.	Acres.	Assessment.	Mortgage money.
1	Samrála.	Total transactions ...	1,719	5,656	10,023	1,44,730
		Rate of assessment per acre	...	...	1 12 3	...
		Average price per acre ...	...	...	...	26
		Average price per rupee of revenue ...	...	...	...	14
2	Ludhiána.	Total transactions ...	3,045	10,748	13,912	3,19,880
		Rate of assessment per acre	...	...	1 4 9	...
		Average price per acre ...	...	...	...	30
		Average price per rupee of revenue ...	...	...	...	23
3	Jagrón.	Total transactions ...	2,568	9,362	9,658	2,98,443
		Rate of assessment per acre	...	...	1 0 6	...
		Average price per acre ...	...	...	...	32
		Average price per rupee of revenue ...	...	...	...	31
4	Total.	Total transactions ...	7,332	25,785	33,593	7,63,053
		Rate of assessment per acre	...	...	1 4 10	...
		Average price per acre ...	...	...	...	26
		Average price per rupee of revenue ...	...	...	...	23

Vb.—(Continued.)

date of the former and present Settlement.—(Continued)

20	21	22	23	24	25	26	27
----	----	----	----	----	----	----	----

MORTGAGES.—(Continued.)

POSSESSION.—(Continued.)				MORTGAGES WITHOUT POSSESSION.			
Total,				Mortgaged to Agriculturists of the village.			
No. of hold-ings.	Acres.	Assessment.	Mortgage money.	No. of hold-ings.	Acres.	Assessment.	Mortgage money.
3,279	10,231	18,178	2,58,827	2	4	5	121
...	...	1 12 5	...	...	...	1 4 0	...
...	...	...	25	...	...	...	30
...	...	...	14	...	...	...	24
7,323	27,950	31,791	8,31,463	139	787	756	20,433
...	...	1 3 7	...	...	...	0 15 5	...
...	...	...	32	...	...	...	26
...	...	...	26	...	...	...	27
7,889	27,567	26,347	8,23,450	77	463	491	11,188
...	...	1 1 2	...	...	...	1 1 0	...
...	...	...	34	...	...	...	24
...	...	...	31	...	...	...	23
18,491	60,748	76,319	19,13,740	218	1,254	1,252	31,742
...	...	1 4 1	...	...	...	1 0 0	...
...	...	...	32	...	...	...	25
...	...	...	25	...	...	...	25

APPENDIX

Statement showing the land Mortgaged at the

Serial number.	Name of tahsil.	DETAIL.	28	29	30	31
			PRESENT			
			MORTGAGES WITHOUT			
			Mortgaged to Agriculturists of other villages.			
			No. of hold-ings.	Acres.	Assessment.	Mortgage money.
1	Samrāla.	Total transactions ...	4	24	34	390
		Rate of assessment per acre	...	...	1 6 8	...
		Average price per acre ...	...	...	...	16
		Average price per rupee of revenue ...	...	...	...	11
2	Ludhiāna.	Total transactions ...	92	676	818	20,142
		Rate of assessment per acre	...	...	1 3 4	...
		Average price per acre ...	...	...	...	30
		Average price per rupee of revenue ...	...	...	...	25
3	Jagrāon.	Total transactions ...	61	353	364	6,796
		Rate of assessment per acre	...	...	1 0 7	...
		Average price per acre ...	...	...	...	19
		Average price per rupee of revenue ...	...	...	...	19
4	Total.	Total transactions ...	157	1,053	1,216	27,328
		Rate of assessment per acre	...	...	1 2 6	...
		Average price per acre ...	...	...	...	25
		Average price per rupee of revenue ...	...	...	...	22

Vb.—(Continued.)

date of the former and present Settlement.—(Continued.)

32	33	34	35	36	37	38	39
----	----	----	----	----	----	----	----

MORTGAGES.—(Continued.)

POSSESSION.—(Continued.)

Mortgaged to other persons.				Total.			
No. of hold-ings.	Acres.	Assessment.	Mortgage money.	No. of hold-ings.	Acres.	Assessment.	Mortgage money.
13	166	269	3,411	19	194	308	3,922
...	...	1 9 11	...	...	...	1 9 5	...
...	...	...	21	...	...	...	20
...	...	...	13	...	...	...	13
698	2,987	4,415	95,527	929	4,450	5,989	1,36,102
...	...	1 7 8	...	...	...	1 5 6	...
...	...	...	32	...	...	...	31
...	...	...	22	...	...	...	32
312	1,612	1,578	44,178	450	2,428	2,433	62,162
...	...	0 15 8	...	...	...	1 0 1	...
...	...	...	27	...	...	...	26
...	...	...	28	...	...	...	26
1,023	4,765	6,262	1,43,116	1,398	7,072	8,730	2,02,186
...	...	1 11 11	...	...	...	1 3 9	...
...	...	...	30	...	...	...	29
...	...	...	22	...	...	...	23

APPENDIX Vb.—(Concluded.)

Statement showing the land Mortgaged at the date of the former and present Settlement.—Concluded.

Serial number.	Name of tahsil.	DETAIL.	40	41	42	43	44	
			PRESENT MORTGAGES.—(Concluded.)					
			GRAND TOTAL.					
			No. of holdings.	Acres.	Assessment.	Mortgage money.	Percentage of total area.	
1	Samrāla.	Total transactions ...	3,298	10,425	18,486	2,62,749	6	
		Rate of assessment per acre ...	..	..	1 12 9	..	..
		Average price per acre ...	..	..	..	25	..
		Average price per rupee of revenue ...	..	..	..	14	..
2	Ludhiāna.	Total transactions ...	8,252	30,400	37,783	9,67,565	7	
		Rate of assessment per acre ...	..	..	1 3 11	..	..
		Average price per acre ...	..	..	..	32	..
		Average price per rupee of revenue ...	..	..	..	30	..
3	Jagrāon.	Total transactions ...	8,339	26,995	28,787	8,85,612	12	
		Rate of assessment per acre ...	..	..	1 1 1	..	..
		Average price per acre ...	..	..	..	33	..
		Average price per rupee of revenue ...	..	..	..	31	..
4	Total.	Total transactions ...	19,889	67,820	85,056	21,15,926	8	
		Rate of assessment per acre ...	..	..	1 4 1	..	..
		Average price per acre ...	..	..	..	31	..
		Average price per rupee of revenue ...	..	..	..	25	..

STATISTICS OF TRANSFER OF LAND.—(*Contd.*)

APPENDIX Vc.

STATISTICS DERIVED FROM THE RECORDS
OF REGISTRATION.

APPENDIX Vc.

Statement showing the sales and mortgages of lands registered in District Ludhiána arranged in periods of five years.

Serial No.	Name of tahsil.	Years.	SALE.			MORTGAGES WITH POSSESSION.			MORTGAGES WITHOUT POSSESSION.		
			Area.	Price.	Average per acre.	Area.	Mortgage money.	Average per acre.	Area.	Mortgage money.	Average per acre.
1	Samrála.	1856 ...	...	...	...	5	31	7	...	...	...
		1857 ...	13	72	5	76	175	2	...	...	...
		1858 ...	...	...	...	...	...	...	...	...	...
		1859 ...	...	...	...	13	249	19	38	300	8
		1860 ...	...	...	...	11	166	15	7	60	9
		Total, 1856-60	13	72	5	105	624	6	45	360	8
		1861 ...	44	171	4	105	1,004	9	7	150	9
		1862 ...	106	1867	8	113	1,317	12	51	256	5
		1863 ...	104	1858	18	136	1,808	13	89	250	3
		1864 ...	68	994	15	135	2,092	15	322	3,050	9
		1865 ...	71	2197	4	398	3,796	10	83	1,046	13
		Total, 1861-65	393	7087	18	887	10,016	12	552	4,752	9
		1866 ...	262	3,586	14	666	10,783	16	89	1,589	18
		1867 ...	225	4,861	22	601	10,501	17	75	1,534	20
		1868 ...	385	9,081	24	1,091	18,134	17	11	150	14
		1869 ...	538	14,048	26	1,210	24,675	20	95	2,597	27
		1870 ...	436	9,752	22	1,342	28,884	22	30	826	28
		Total, 1866-70	1,846	41,328	23	4,910	22,975	19	300	6,687	23
		1871 ...	191	7,012	37	722	21,602	30	10	400	40
		1872 ...	453	12,839	28	810	22,827	27	2	40	20
		1873 ...	402	14,143	35	850	21,235	25	6	119	20
		1874 ...	227	9,104	40	784	24,690	31	16	1,100	69
		1875 ...	441	9,408	21	1,111	31,696	28	64	1,515	24
		Total, 1871-75	1,714	52,606	37	4,277	1,22,050	29	98	3,174	33
		1876 ...	343	9,816	29	1,150	28,893	25	23	665	2
		1877 ...	42	13,399	32	1,279	36,411	28	114	1,015	9
		1878 ...	259	8,061	31	927	28,773	31	58	1,365	24
		1879 ...	340	13,066	31	1,222	29,417	24	...	...	...
		1880 ...	249	10,309	41	1,089	32,237	30	3	175	58
		Total, 1876-80	1,612	54,591	34	5,667	15,5,732	27	198	3,220	11
		Total tahsil, 1856-80	5,578	1,55,503	28	15,846	3,81,396	24	1,193	18,192	15

APPENDIX Vc.—(Continued.)

Statement showing the sales and mortgages of land registered in District Ludhiāna arranged in periods of five years.—(Continued.)

Serial No.	Name of taluqd.	Years.	SALE.			MORTGAGES WITH POSSESSION.			MORTGAGES WITHOUT POSSESSION.		
			Area.	Price.	Average per acre.	Area.	Mortgage money.	Average per acre.	Area.	Mortgage money.	Average per acre.
2 Ludhiāna.		1852 ...	267	2,866	11	100	2,862	27	...	...	...
		1853 ...	...	...	...	56	255	5	...	...	...
		1854 ...	...	...	...	105	300	3	...	...	...
		1855 ...	...	...	...	126	1,210	10	...	...	...
		Total, 1852—55	267	2,866	11	378	4,627	12	...	...	...
		1856 ...	...	...	...	202	573	3	62	100	2
		1857 ...	3	147	49	49	405	8	...	...	...
		1858 ...	...	...	...	30	234	8	...	...	...
		1859 ...	3	9	3	174	1,227	7	9	170	19
		1860 ...	182	2,003	17	557	3,514	6	8	105	13
		Total, 1856—60	188	2,159	11	1,012	5,893	6	79	375	5
		1861 ...	65	1,352	21	628	4,459	7	103	530	5
		1862 ...	322	4,262	13	958	11,430	12	76	364	5
		1863 ...	137	1,644	12	1,123	23,248	21	123	1,028	8
		1864 ...	48	1,626	34	539	7,195	13	85	762	9
		1865 ...	174	2,782	16	685	11,733	17	171	1,770	10
		Total, 1861—65	746	11,666	16	3,933	58,065	15	558	4,455	7
		1866 ...	163	5,512	34	1,295	25,957	20	326	4,048	12
		1867 ...	201	7,941	40	1,575	32,697	5	535	4,219	8
		1868 ...	339	15,469	46	1,796	43,942	24	677	11,061	16
		1869 ...	323	12,558	39	2,402	70,869	30	901	63,500	15
		1870 ...	531	20,414	38	1,566	59,323	38	358	6,502	18
		Total, 1866—70	1,557	61,894	40	8,634	2,32,788	27	2,797	39,330	14
		1871 ...	464	59,266	128	1,303	26,608	20	334	9,495	28
		1872 ...	552	26,238	48	3,261	1,15,637	25	326	9,015	28
		1873 ...	484	25,423	53	3,531	1,04,407	29	330	9,231	28
		1874 ...	416	20,713	50	2,169	86,923	40	153	6,525	43
		1875 ...	311	25,642	82	1,106	50,958	46	138	4,655	39
		Total, 1871—75	2,227	15,7312	71	11,370	3,84,533	35	1,281	38,921	30

NOTE.—I have been unable to collect the details recorded in the offices of the Sardars of Maloud, who have been subregistrars since 1866. Our figures may therefore be taken as not including Maloud Pargana.

APPENDIX Vc.—(Continued.)

Statement showing the sales and mortgages of land registered in District Ludhiāna arranged in periods of five years.—(Continued.)

Serial No.	Name of tahsil.	Years.	SALE.			MORTGAGES WITH POSSESSION.			MORTGAGES WITHOUT POSSESSION.		
			Area.	Price.	Average per acre.	Area.	Mortgage money.	Average per acre.	Area.	Mortgage money.	Average per acre.
2	Ludhiāna.—(Concluded.)	1876 ...	289	18,549	64	1,106	42,801	39	304	7,987	26
		1877 ...	272	7,010	26	1,003	36,589	36	226	7,387	33
		1878 ...	386	26,889	70	848	34,174	40	240	8,916	33
		1879 ...	688	47,154	69	1,487	62,778	42	537	20,764	39
		1880 ...	816	47,868	54	1,806	81,558	45	396	15,250	35
		Total, 1876—80	2,521	14,747	58	6,247	25,790	41	1,703	59,397	35
		Total tahsil, 1852—80	7,506	3,83,367	51	31,583	9,43,806	30	6,411	14,24,77	22
		1856 ...	...	...	...	...	...	...	...	...	...
		1857 ...	63	300	5	...	...	...	...	...	...
		1858 ...	...	...	...	...	...	...	...	...	...
3	Jagāon.	1859 ...	...	...	...	...	...	...	...	...	...
		1860 ...	...	...	...	39	360	15	...	...	...
		Total, 1856—60	63	300	5	39	360	9	...	...	...
		1861 ...	57	172	3	162	1,565	9	47	369	9
		1862 ...	62	1,095	18	220	3,314	12	218	2,398	5
		1863 ...	185	1,776	10	335	4,653	13	178	1,440	9
		1864 ...	171	2,906	17	1,182	7,744	15	225	2,516	3
		1865 ...	109	2,492	23	2,454	31,962	10	494	7,495	3
		Total, 1861—65	584	8,441	14	4,353	49,168	11	1,162	14,239	12
		1866 ...	715	6,967	1	1,062	18,077	16	1,007	12,831	18
		1867 ...	85	3,780	44	1,452	34,571	17	1,747	27,477	20
		1868 ...	135	5,302	39	2,108	44,267	17	1,491	24,024	84
		1869 ...	22	10,207	46	2,791	70,822	20	547	10,468	27
		1870 ...	152	7,072	47	3,315	88,325	22	506	12,517	28
		Total, 1866—70	1,308	33,326	25	10,728	2,56,062	24	5,298	87,325	16
		1871 ...	119	5,112	43	3,525	1,12,263	30	752	19,141	40
		1872 ...	56	3,959	110	2,623	1,15,789	27	579	20,831	20
		1873 ...	916	31,131	34	2,490	48,550	25	803	13,129	20
		1874 ...	460	16,084	35	2,145	66,097	31	599	10,759	19
		1875 ...	212	11,868	56	2,110	67,950	28	715	15,442	24
		Total, 1871—75	1,643	68,151	39	12,893	4,03,589	33	3,358	79,302	24

APPENDIX Vc.—(Concluded.)

Statement showing the sales and mortgages of land registered in District Ludhiāna arranged in periods of five years.—(Concluded.)

Serial No.	Name of tahsil.	Years.	SALE.			MORTGAGES WITH POSSESSION.			MORTGAGES WITHOUT POSSESSION.		
			Area.	Price.	Average per acre.	Area.	Mortgage money.	Average per acre.	Area.	Mortgage money.	Average per acre.
3	Jagráon.—(Concluded.)	1876 ...	476	20,392	43	1,951	67,525	25	711	16,049	29
		1877 ...	399	18,037	45	1,848	59,338	28	785	15,937	9
		1878 ...	501	25,963	52	2,454	87,851	31	853	22,275	24
		1879 ...	996	41,745	42	4,937	1,89,772	24	404	11,097	...
		1880 ...	623	42,288	68	3,798	1,78,160	30	57	2,105	58
		Total, 1876—80	2,995	1,48,425	50	14,988	5,80,656	39	2,810	67,493	24
		1881 ...	561	41,822	75	2,290	1,32,597	58	737	30,090	41
	Total tahsil	1856—81	7,254	3,00,467	41	45,291	14,49,432	32	13,364	2,78,419	21
		1852—81	20,338	8,59,417	42	92,720	27,94,634	30	20,976	4,39,088	21

NOTE.—The total of this return will not of course agree with that of the preceding, because the same land may appear several times in this as often as it has changed hands.

APPENDIX VI.

SHOWING THE DISTRIBUTION OF LAND AMONGST THE
AGRICULTURAL TRIBES.

APPENDIX VI.

Showing the distribution of Land amongst the Agricultural tribes.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Serial Number.	Name of tribe.	HINDUS.																						
		JATS.																						
		Garewal.		Gil.		Sidhu		Dhaliwal.		Dhilon.		Sekhon.		Bhandar.		Other Jats.		Total.		Other Hindus.		GRAND TOTAL.		
Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	
1	{	1,18,512	1,80,669	1,18,512	1,80,669	12,612	14,861	1,31,124	1,95,530
		64	69	64	69	6	6	70	75
2	{	37,931	54,725	13,145	13,644	22,448	11,196	11,910	10,786	6,470	5,221	4,940	5,517	11,437	15,177	1,46,046	1,69,183	2,54,227	2,85,451	37,928	26,363	2,92,085	3,11,813	
		8	13	3	3	6	3	3	3	1	1	1	1	3	3	34	39	58	66	0	0	6	6	66	72
3	{	3,648	3,556	13,341	12,097	24,603	21,608	16,370	15,463	6,257	4,693	...	...	...	...	1,16,803	1,11,536	1,80,082	1,68,908	14,796	10,991	1,94,828	1,79,900
		1	2	5	5	9	9	6	7	2	2	...	...	...	...	45	47	65	72	6	5	74	77
4	{	41,579	58,231	28,486	25,741	47,051	32,706	28,180	26,249	11,727	9,920	4,940	5,517	11,437	15,177	3,81,421	4,61,438	5,52,921	3,35,038	65,186	52,214	6,18,007	6,87,245	
		9	6	3	3	5	3	3	3	1	1	1	1	1	1	43	50	62	63	8	6	71	75	

APPENDIX VI.—(Concluded.)

Showing the distribution of Land amongst the Agricultural tribes.

Serial Number.	Name of tahsil.	25	26	27	28	29	30	31	32	33	34	35	38	37	38	39	40
		MAHOMEDANS.															
		RAJPUT.		GUJAR.		ARAB.		JAT.		OTHERS.		TOTAL.		MISCELLANEOUS.		TOTAL.	
		Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.	Area.	Revenue.
1	Bawla.	18,337	22,851	5,108	7,323	1,980	2,328	21,924	30,834	3,101	3,001	53,436	66,340	19	1	1,84,578	2,61,871
		10	8	3	2	1	1	13	12	2	1	30	25	...	...	100	100
2	Tudhiana.	47,913	38,841	38,487	31,365	11,758	12,592	12,320	14,086	27,380	21,094	1,36,998	1,17,938	4,986	480	4,34,039	4,30,281
		11	8	9	7	3	3	3	3	6	5	32	28	1	1	100	100
3	Jafraon.	21,145	14,971	17,416	14,337	16,861	14,370	21,728	1,089	10,738	7,654	67,912	53,221	799	404	2,63,539	2,33,625
		8	7	7	6	6	6	1	1	4	3	26	23	1	1	100	100
4	Total.	46,506	70,663	61,031	5,30,045	30,808	29,593	38,961	46,012	41,216	31,438	2,58,246	2,37,519	5,804	665	8,82,157	9,25,677
		10	8	7	6	3	3	4	5	6	3	29	25	1	1	100	100

APPENDIX VII.

STATEMENT SHOWING THE VARIETIES OF TENURES HELD
DIRECT FROM GOVERNMENT IN THE LUDHIANA DIS-
TRICT.

*(No. XXXIII of the Statements accompanying the Annual Revenue
Administration Report.)*

APPENDIX VII.

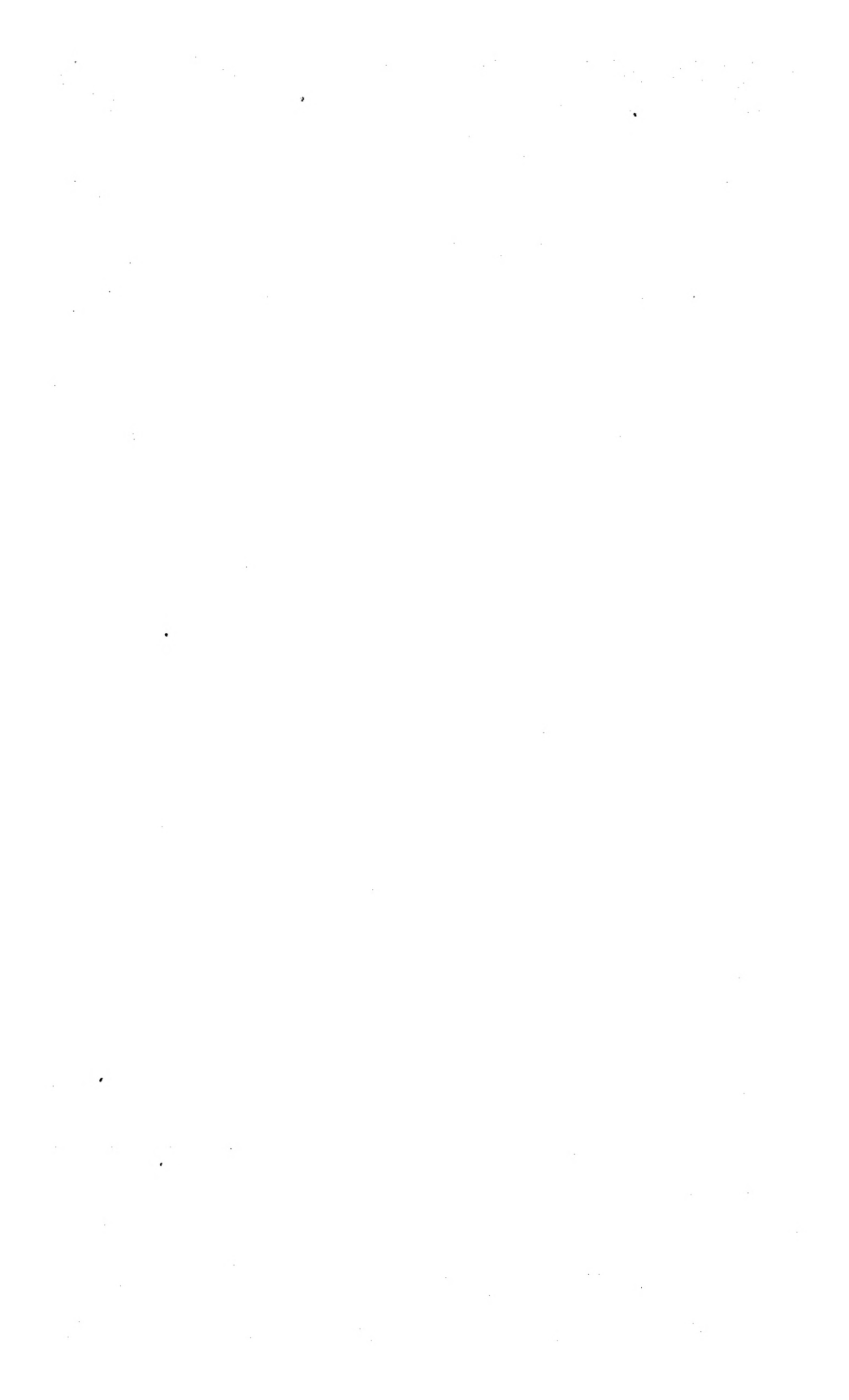
Statement showing the varieties of tenure held direct from Government in the Ludhiána District.

1	2	3	4	5	6	7	8
NATURE OF TENURE.	No. of estates.	No. of villages.	No. of holders or shareholders.	Gross area in acres.	Average area of each estate.	Average assessment of each estate.	Revenue per acre.
I.—Zamindari.							
(1.) Great Zamindaris paying above Rs. 50,000 revenue.	(a) Held by individuals under law of primogeniture. ...	...	...	...	...	...	...
	(b) Held by individuals and families under ordinary law. ...	...	...	...	...	...	...
(2.) Large zamindaris paying above Rs. 5,000 revenue.	(a) Ditto ...	...	...	...	...	...	...
(3.) Zamindaris paying from Rs. 1,000 to 5,000 revenue.	(b) Ditto ...	...	...	...	...	...	...
(4.) Zamindaris paying Rs. 1,000 and under.	(a) Ditto ...	...	...	...	...	...	...
	(b) Ditto ...	...	5	5	1,827	325	371
(5.) Proprietary cultivating communities paying in common.	... ..	...	22	350	7,857	357	277
							0-12-5
II.—Village Communities not paying in Common.							
(1.) Pattidari ...	In which the land and the revenue are divided upon ancestral or customary shares, subject to succession by the law of inheritance. ...	...	9	545	4,513	501	633
(2.) Bhaiachara ...	In which possession is the measure of right in all lands. ...	...	47	7,428	55,640	1,184	1,485
(3.) Mixed or imperfect Pattidari or Bhaiachara.	In which the lands are held partly in severalty and partly in common. The measure of right in common land being the amount of the share or the extent of land held in severalty. ...	...	818	88,347	8,12,166	993	1,293
							1-4-9

APPENDIX VII.—(Continued.)

Statement showing the varieties of tenure held direct from Government in the Ludhiana District.

1	2	3	4	5	6	7	8
NATURE OF TENURE.	No. of estates.	No. of villages.	No. of holders or shareholders.	Gross area in acres.	Average area of each estate.	Average assessment of each estate.	Revenue per acre.
III.—Grantees of British Government (not falling under any of the previous classes) paying revenue direct to Government in the position of—							
(1.) Proprietors ... { Including individuals rewarded for services, or otherwise but not purchasers of Government waste (v). }	...	...	...	...	...	...	...
(2.) Lessees ...	...	...	...	...	...	...	...
IV.—Landholders who have redeemed the revenue and are not members of any village community not included in any of the previous classes. }	...	...	...	...	...	...	...
V.—Purchasers of Government waste paying revenue direct to Government, and not falling under any of the previous classes. }	...	...	...	...	...	...	...
VI.—Government waste reserved or unassigned. { (a) Administered as forests under forest law. }	2	...	...	277	138	...	...
{ (b) Other lands...	1	...	...	77	77	...	...
TOTAL ...	3	908	90,705	8,82,157	118	...	1-4-2



APPENDIX VIII.

STATEMENT OF TENURES NOT HELD DIRECT
FROM GOVERNMENT.

*(No. XXXIV of the Statements accompanying the Annual Revenue
Administration Report.)*

APPENDIX VIII.

Statement of Tenures not held direct from Government in the Ludhiana District.

District.	NATURE OF TENURE.	Number of hold- ings.	Area of land held.	Average area of holding.	Average cash rent of each holding	Average rent per acre.
LUDHIANA.	I.—Tenants with right of occupancy—			A. R. P.	Rs. A. P.	Rs. A. P.
	Paying cash rents.					
	(1) Paying only the amount of the Govern- ment revenue to the proprietors ...	3,669	16,844	4 2 14	5 5 0	1 2 6
	(2) Paying such amount <i>plus</i> a cash malikana ...	1,622	6,816	3 2 14	5 7 11	1 3 6
	(3) Paying at stated cash rates per acre ...	205	345	1 2 29	3 6 7	2 0 5
	(4) Paying lump sums (cash) for their hold- ings	691	1,649	2 3 6	6 2 7	2 3 4
	Total, paying rent in cash ...	6,087	24,654	4 0 8	6 5 4	1 9 0
	Paying in kind.					
	(1) Paying by a stated share of the produce in kind. A.					
	(a) $\frac{1}{2}$ produce and more ...	84	744	8 3 17	...	...
	(b) $\frac{1}{2}$ produce and less than $\frac{1}{2}$ produce ...	683	3,888	6 1 12	...	...
	(c) $\frac{1}{2}$ produce and less than $\frac{1}{2}$ produce ...	430	555	1 1 7	...	...
	(d) $\frac{1}{2}$ produce and less than $\frac{1}{2}$ produce ...	...	...	...	...	...
	(e) less than $\frac{1}{2}$ share of produce ...	...	...	...	...	...
	(2) Paying by a stated share of the produce <i>plus</i> a further cash contribu- tion. B.					
	(a) when the share of produce paid is $\frac{1}{2}$ and more ...	...	...	...	...	...
	(b) when the share of produce paid is less than $\frac{1}{2}$...	22	85	3 3 18	10 6 7	2 11 1
	(3) Paying a fixed amount of grain for their holdings with or without a further cash contribution. C.	86	728	8 1 34	2 7 3	0 4 7
	Total, paying rent in kind ...	1,205	5,800	4 3 5	...	...
	Grand total of tenants with right of occupancy ...	7,292	30,454	4 0 28	...	...
	II.—Tenants holding conditionally—					
	(1) For life ...	...	...	...	...	...
	(2) For period (a) written on lease, (b) not written ...	...	...	...	...	...
	(3) Subject to village service and payment of rent ...	...	...	...	...	...
	III.—Tenants-at-will—					
	(a) Paying in cash ...	19,335	45,977	2 1 20	...	...
	(b) Paying in kind $\frac{1}{2}$ produce and more ...	12,746	34,405	2 2 3	...	...
	(c) Paying in kind less than $\frac{1}{2}$ produce ...	12,215	35,083	2 8 19	...	...
	(c) Paying in cash and partly in kind ...	316	1,220	3 3 1	...	...
	IV.—Holders of service grants cultivating the lands held in fee, parties enjoying free holds from proprietors, being excused all revenue—					
	(1) Bankalap or Dharmarth ...	1,744	2,314	1 1 35	...	...
	(2) Conditional on service ...	143	139	0 8 35	...	...
	Total ...	53,791	1,49,682	2 3 5	...	...

REMARKS.—The details of this return have been taken from the annual papers of 1882-83, and differ somewhat from those of App. II., which was prepared from the Survey papers of 1878-79.

APPENDIX IX.

GOVERNMENT NOTIFICATIONS REGARDING THE LUDHIANA
SETTLEMENT WHICH HAVE BEEN ISSUED
FROM TIME TO TIME.

APPENDIX IX.

Government Notifications regarding the Ludhiána Settlement which have been issued from time to time.

(1).—General Notifications.

Notification No. 216, dated 25th February 1879.—Whereas the Ludhiána district is to be put under Settlement, His Honor the Lieutenant-Governor is pleased, with the previous sanction of the Governor-General in Council, to issue the following notification of Settlement, in accordance with the provisions of Section 11 of the Panjáb Land Revenue Act, 1871 :—

- (1). The local area which is hereby put under Settlement consists of the Ludhiána district.
- (2). Powers—See below.
- (3). The Settlement to be made will be a re-Settlement, and will comprise both a re-assessment and a revision of the record of rights.
- (4). Surveys and plans will be made for the whole district.

Notification No. 2338, dated 14th August 1880.—In exercise of the powers conferred by Section 35 of the Court Fees Act VII of 1870, the Governor-General in Council directs that the fee on a plaint or memorandum of appeal in a suit for a declaration of title instituted in the Court of a Settlement Officer invested with the powers under Section 49 of the Panjáb Courts Act, 1877, shall be reduced to one rupee.

Notification No. 267, dated 25th October 1882.—So much of *Panjáb Government Gazette* Notifications, Nos. 216, 217 and 220 of 25th February 1879, 889 of 29th July 1879, 1237 of 17th November 1879, 1340 of 13th December 1879, 590 of 26th June 1880, 372 of 31st March 1881, 395 of 2nd April 1881, 754 of 11th July 1881, 1139, dated 27th October 1881, 215 of 7th September 1882, and 237 of 23rd September 1882, as related to the trial of suits and appeals regarding land or the rent, revenue or produce of land arising in the Ludhiána district, is hereby cancelled with effect from the 2nd November 1882.

Under Section 49 of Act XVII of 1877, the Honorable the Lieutenant-Governor is pleased to direct that the jurisdiction hereby withdrawn shall from the said date be exercised solely by the Civil Courts by which such jurisdiction would have been exercised had the parts of the aforesaid notifications hereby cancelled not been published. Provided that any cases now pending before any officer under any of the said notifications shall be disposed of by him as if this present notification had not been issued.

Notification No. 248, dated 31st October 1883.—In continuation of of *Panjab Government Gazette Notification No. 267, dated 25th October 1882*, the Honorable the Lieutenant-Governor, on the report of the Financial Commissioner that Settlement operations are complete in the Ludhiāna district, is pleased to direct, under Section 17 of Act XXXIII of 1871, that the record of rights recently prepared for the said district be handed over to the Deputy Commissioner of Ludhiāna.

(2).—Powers of Officers.

Mr. T. Gordon Walker, Settlement Officer.

CIVIL POWERS—

Notification No. 216, dated 25th February 1879.—Powers of a Deputy Commissioner as defined in Act XVII of 1877 to decide suits and appeals—

- (1). Under the Panjab Tenancy Act, 1868.
- (2). To alter or cancel any entry in the register of names of proprietors of revenue-paying estates.
- (3). Under Section 9 of the Specific Relief Act of 1877.

Notification No. 1237, dated 17th November 1879.—To hear suits and appeals for declaration of title in land, or the rent, revenue or produce of land.

REVENUE POWERS—

Notification No. 218, dated 25th February 1879.—Powers of a Deputy Commissioner specified below—

- (1). Under the Panjab Tenancy Act, 1868.
- (2). Under the Panjab Land Revenue Act, 1871, proceedings for the collection of revenue or arrears of revenue being excepted.

CRIMINAL POWERS—

Notification No. 219, dated 25th February 1879.—To continue to exercise in the Ludhiāna district the Magisterial powers with which he was invested by Panjab Government Order No. 804, dated 18th July 1877.

M. Charanjit Lāl, Extra Assistant Settlement Officer.

CIVIL POWERS—

Notification No. 216, dated 25th February 1879.—As above.

REVENUE POWERS—

Notification No. 216, dated 25th February 1879.—As above.

CRIMINAL—

Notification No. 219, dated 25th February 1879.—As above.

M. Ahmad Bakhsh, Officiating Extra Assistant Settlement Officer.

CIVIL POWERS—

Notification No. 215, dated 7th September 1882.—As above.

REVENUE POWERS—

Notification No. 216, dated 7th September 1882.—As above.

CRIMINAL POWERS—

Notification No. 217, dated 7th September 1882. Powers of the Magistrate of 1st class.

M. Harbans Ldl, Superintendent.

Notification No. 216, dated 25th February 1879.—Powers of a tahsildár with special powers in respect of the classes of Civil and Revenue cases mentioned above.

M. Khushál Singh, Superintendent.

Notification No. 216, dated 25th February 1879.—As above.

M. Ahmad Bakhsh, Superintendent.

Notification No. 216, dated 25th February 1879.—As above.

M. Ishar Dás, Superintendent.

Notification No. 216, dated 25th February 1879.—As above.

M. Mahomed Azím Khán, Officiating Superintendent.

Notification No. 889, dated 29th July 1879.—As above.

M. Jodh Singh, Superintendent.

Notification No. 1340, dated 13th December 1879.—As above.

M. Khádam Husein, Superintendent.

Notification No. 590, dated 26th June 1880.—As above.

M. Amír Chand, Officiating Superintendent.

Notification No. 372, dated 31st March 1881.—As above.

M. Karm Sháh, Officiating Superintendent.

Notification No. 395, dated 2nd April 1881.—As above.

M. Amír Chand, Superintendent.

Notification No. 548, dated 25th March 1881.—As above.

M. Karm Sháh, Officiating Superintendent.

Notification No. 237, dated 23rd September 1882.—As above.

APPENDIX X.

RETURN OF CIVIL, REVENUE AND OTHER CASE WORK
DISPOSED OF BY THE OFFICIALS OF THE
LUDHIANA SETTLEMENT.

APPENDIX X.

RETURN OF CIVIL, REVENUE AND OTHER CASE WORK DISPOSED OF BY THE OFFICIALS OF THE LUDHIANA SETTLEMENT.

I.—General Statement showing the work performed by each grade of officials.

OFFICE.	Original Civil Suits.	Execution Cases.	Original Revenue Cases.	Civil Appeals.	Revenue Ap- peals.	Criminal Cases
Settlement Officer ...	...	...	2,200	181	87	25
Extra Assistant Settlement Officer.	284	91	5,411	123	18	54
Superintendents ...	1,236	265	3,792	...	...	128
TOTAL ...	1,520	356	11,403	304	105	202

11.—Classified Statement of Original Civil and Revenue cases decided.

No. of heading.	No. in the Business Return form.	DESCRIPTION OF SUITS.	No. of cases.
<i>A.—Ordinary suits for rights.</i>			
1	7	Suits to recover possession of immoveable property, Section 9 of the Specific Relief Act ...	321
2	12	Correctness of an entry in a record of rights under Section 20 of Act XXXIII of 1871 ...	100
3	13	Other rights affecting the immovable property not expressly provided for ...	537
TOTAL A ...			958
<i>B.—Rent suits and suits under Panjab Tenancy Act.</i>			
4	23	Suits to recover arrears of rent from tenants without right of occupancy ...	37
5	29	Suits to recover under Section 5 by tenants for right of occupancy ...	171
6	30	Suits to recover to establish right of occupancy under Section 8 ...	25
7	31	Suits under Section 6 by landlords for rebuttal of presumptive right of occupancy ...	29
8	32	Suits under Sections 10 and 11 for enhancement of rent	227
9	36	Suits under Section 19 by landlords for ejectment of tenants without right of occupancy (Section 19, clause 1)	5
10	38	Suits under Section 20 by landlords for ejectment of tenants without right of occupancy ...	12
11	39	Suits under Section 25 by tenants to contest notice of ejectment ...	56
TOTAL B ...			562
<i>C.—Revenue cases.</i>			
12	46	Lambardars' cases ...	1,035
13	47	Patwaris' cases ...	164
14	49	Erection of boundary marks, Section 22 of Act XXXIII of 1871 ...	150
15	54	Grants of revenue to gardens and groves, Finl. Comr.'s B. Cir. I of 1870 ...	10
16	55	Investigations as to grants and resumptions of assignments other than mentioned in Financial Commissioner's Book Cir. XII of 1875 ...	2,784
17	56	Alluvion and Diluvion ...	489
18	58	Mutations in the registers, other than lambardars' cases	5,103
19	59	Partition of lands held in joint ownership ...	1,353
20	60	Complete partition of estates ...	1
21	61	Under Section 17 for division or appraisement of produce ...	6
22	62	Under Section 23 services of notice of ejectment ...	266
23	63	Under Section 26 proceedings in assistance of ejectment	42
TOTAL C ...			11,403
GRAND TOTAL A, B, C ...			12,923

APPENDIX XI.

(I.)—STATEMENT SHOWING THE EXPENDITURE FROM IMPERIAL AND PROVINCIAL REVENUE UP TO 31ST OF DECEMBER 1883.

APPENDIX XI.

(1).—Statement showing the expenditure from Imperial and Provincial Revenue up to 31st of December 1883.

Major head of service.	Minor head of service.	Expenditure.			
		Rs. As. P.			
LAND-REVENUE SETTLEMENT CHARGES.	Establishment.	Salary and Settlement allowance of gazetted Officers	88,294	15	11
		Travelling allowance of gazetted Officers	6,242	9	0
		TOTAL	94,537	8	11
		Office establishment	95,648	1	8
		Munserims' and Sadr Munserims' allowance	57,733	6	10
		Patwáris' Assistants	1,48,589	7	5
		TOTAL ESTABLISHMENT	3,01,970	15	11
	Contingencies.	Travelling allowance of Establishment	11,774	1	5
		Hot and cold weather charges	1,286	5	5
		Tour charges, including pay of khalassis and carriage of records	7,917	11	10
		Purchase and repairs of tent	1,800	12	6
		Hutting	482	0	0
		Survey equipment	2,499	9	0
		Other items	11,178	6	2
		TOTAL	36,938	14	4
	Law and Justice, Stationery, Printing.	Advance from Parcha fees	24,212	15	5
		TOTAL LAND-REVENUE SETTLEMENT CHARGES	4,57,660	6	7
		Process serving establishment	7,652	6	6
	Other heads.	Country stationery	17,989	5	10
		Lithography	3,785	0	9
		TOTAL	29,426	13	1
Office rent	7,181	0	11		
TOTAL Rs.	4,94,267	4	7		

APPENDIX XI.—(Continued.)

(2).—Statement of receipts and expenditure under the head of Settlement Fees up to 31st of December 1883.

No.	Head.	Receipt.	Expenditure.	Balance.
		Rs. As. P.	Rs. As. P.	Rs. As. P.
1	Patwáris' fees ...	2,05,800 9 7	2,00,388 1 6	5,412 8 1
2	Parcha fees, 6 pies...	8,532 1 0	4,662 0 6	3,870 0 6
3	Fine of Patwáris ...	3,703 3 0	3,430 11 4	272 7 8
4	Miscellaneous ...	8,793 4 11	8,774 12 9	18 8 2
5	Office Record Fund...	1,533 4 6	580 6 4	952 14 2
6	Copyists' fee ...	10,086 5 0	10,084 6 4	1 14 8
	TOTAL ...	2,38,448 12 0	2,27,920 6 9	10,528 5 3

(3).—Statement showing the amounts to be credited to Government on account of Settlement Fees and other items, and the net cost of Settlement operations.

Head of Receipt.	Amount.
	Rs. As. P.
Balance of 6 pies fees ...	3,870 0 6
To be realized on account of final Parcha fees ...	91,855 8 0
To be realized from Jágirdars on their share of the expenses of Settlement ...	41,753 0 0
Credited to Government by sale of waste paper, &c., &c.	650 2 9
TOTAL Rs. ...	1,38,128 11 3
Total cost of Settlement ...	4,94,267 4 7
Deduct ...	1,38,128 11 3
NET COST OF SETTLEMENT ...	3,56,138 9 4

APPENDIX XII.

NOTE ON THE SUBJECT OF THE PRICES OF AGRICULTURAL
PRODUCE IN THE LUDHIANA DISTRICT, WITH A
COMPARATIVE STATEMENT OF THOSE PRE-
VAILING FOR THE LAST FORTY YEARS.

APPENDIX XII.

Note on the subject of the prices of agricultural produce in the Ludhiāna district, with a comparative statement of those prevailing for the last forty years (written in 1880.)

1. In a district like Ludhiāna, where there was little margin left at the last Settlement for extension of cultivation, an enhancement of the assessment must be chiefly based on a rise of prices; and the subject of the fluctuations of prices attains the first importance.

2. There are two branches of inquiry into the subject of prices which present themselves in a revision of assessment like this. There is first the general one of the variations of prices during the term of the expiring assessment, and the question of what alteration in the average of prices has occurred since the last assessment was fixed which calls for its revision; and there is, next, the more particular one of what rates we ought to adopt in the produce estimates by which our assessments are checked. It is most convenient to take up both branches of the subject at one time; and, indeed, they are scarcely separable. The two forms of the inquiry are, *first*, to what extent the value of agricultural produce has varied, and how the prosperity of the agriculturist has been affected by variations of the price which he has been enabled to obtain for his surplus produce; and, *second*, what variations have occurred in the value of the share of his surplus produce to which Government is entitled. I do not mean to say that this share is a fixed quantity; for it of course varies with changes in the productive power of the soil and with rents, both of which causes of variation ought to adjust themselves in the produce estimates.

3. The inquiry as to prices was made under directions contained in Settlement Commissioner's Circular No. 74 of 1879. It was based on three sources of information, which I give in order of importance—

I.—The prices which the agriculturists make over their produce at harvest time to the village shopkeepers.

II.—The trade prices at the principal marts of the district.

III.—The prices at the head-quarters of the district reported fortnightly and published in the *Gazette*.

The inquiry as to agriculturists' prices (I) was made by the four Superintendents in the chief villages of their charges. A good many villages had to be selected by each Superintendent, so that the books found in them might make up for mutual deficiencies and might give a reliable average for each tahsil. The number of villages in which books were examined by each Superintendent was—Samrála, seven; Ludhiána, seven; Pakhowál, five; Jagráon, four. I think that the inquiry has been extremely well made, and that the result is reliable. The prices taken by the Superintendents from the books of the shopkeepers were those entered as allowed to agriculturists at the time of making up their accounts, that is about 15th June for the Rabi, and 15th December for the Kharif. The trade prices (II) were inquired into by the Extra Assistant Settlement Officer in the four principal marts of the district, Ludhiána, Khannah (both on the line of Railway), Jagráon and Raikot (each distant about 25 miles from Ludhiána, but now connected with it by a metalled road). Two sets of prices have been taken from the traders' books: (1) those prevailing at the time of harvest; (2) the average of the year—of the prices at a certain date in each month. The statement of prices worked out from those reported in the *Gazette* is as complete as it could be made from the materials.

4. The period over which the inquiry extends is the forty years 1840 to 1879. The averages for eight periods of five years have been struck, and the result obtained for the principal kinds of produce from each of the three Statements entered in a comparative statement (appended), which shows for the whole district the agriculturists' and trade prices for these periods of five years side by side. The trade prices are shown for 30 years only, as the Extra Assistant Settlement Officer did not extend his inquiry further.

5. The prices with which we are most concerned are those at which the agriculturists dispose of their produce; and the trade prices are useful principally as a check on these. The relation between two sets of prices as it appears in the Statement is very much what we should have expected. Anomalous results occur here and there; but these disappear in the final averages, at all events in the price of the more common grains.

6. Let us consider first then the general question of the variations of prices as shown in these statements. Mr. Carpenter, in a memorandum on the subject (Deccan Riots Inquiry,) lays down the principle that "when an enhancement of assessment is proposed proportionate to a rise in the price of grain, the proposal rests on the following assumptions:—

- (1). At a given period the assessment bore a proper relation to rent.
- (2). A rise in the price of grain has taken place since that period.

- (3). A rise in the price of grain produces an equivalent rise in rent."

Elsewhere he defines a rise :—"A permanent rise, when it does occur, is not a clearly defined and tangible event taking place within a period of two or three years. It takes place through a series of fluctuations, the general level of the last fluctuation of the series being higher than that of the first." I will apply these three tests to our statements.

7. First, then, as to the relation that the existing assessment bore to rent, or to what represents it in the case of cultivating proprietors, the net profit of cultivation. The assessment was fixed in this manner. Estimates were framed of the value of the gross outturn in each village, and from this the value of the net profits or proprietor's share of the produce (as distinguished from the cultivator's) was worked out. The proportion of this taken to represent the share of Government was generally two-thirds; but the actual assessments were much under the estimates, and did not exceed half of the net profit thus calculated. The three other elements in an estimate of the value of the Government share of the produce of a tract are : (1) the productive power of the land ; (2) the prices at which the produce will be disposed of by the revenue payers ; (3) the proportion of the produce that represents the proprietor's share or rent.

8. (1). The rates of produce adopted for the estimate were much under the mark, unless the productive power of the soil has increased greatly. It would be out of place here to enter into this subject in detail, so I merely state the result at which I have arrived on a comparison of the records of the former estimates with our experiments and other means of inquiry.

As to (3) the rates of rent were fixed on inquiry, and were probably correct for the time.

9. (2). The estimates were framed about 1850, and the prices adopted for them were based on the average of a few years. The decade 1840 to 1850 was one of high prices, as we all know ; and was followed by a general fall consequent on the introduction of British rule, which led to a sudden expansion of cultivation. For ten to fifteen years prices remained at a low level here as elsewhere through the Panjáb, and did not regain the point at which they had been when the assessment was framed till communications were properly opened, and increase of population raised the demand for agricultural produce. Had the assessment been fully up to the nominal standard, the value of the Government share of the produce being calculated at the prices of the four or five preceding years, it would for the first ten or twelve years of its currency have been in excess of that standard. Had it been the full two-thirds of the proprietor's share valued in this manner, it is clear that nothing would have been left to the proprietor when prices fell. But I have already noticed that the actual

Productive power of land under-estimated at Regular Settlement.

The prices adopted at Regular Settlement. State of prices at that time.

assessment was considerably short of the estimate, and that the assumed rates of produce were under the mark. No difficulty appears to have been experienced here in realizing the revenue, though the demand must have pressed more heavily than was designed; but the ease with which it has always been paid, even when prices were very low, is a proof that it was well under the standard.

The prices assumed varied in the different parganas. They were for the principal products. Wheat, 40 to 45 seers a rupee; barley, 52 to 65; sarson, 25 to 30; joar, 56 to 68; moth, 46 to 60; maize, 50 to 62; wheat and gram, 45 to 52. The prices are in keeping with those prevailing from 1840 to 1850; are much higher than those of 1850 to 1860; and are considerably below the average of the term of Settlement, the last thirty years.

From these considerations I conclude that the amount at which the expiring assessment was fixed did not on the whole exceed the standard now laid down, namely half rent or net assets, though it may have done so for a few years.

10. Next as to the rise that has taken place in prices. Referring to the Statement, we see that during the first two periods of five years (1840 to 1850) there is a general rise of prices, and that at the close of the period they are very high. The prices are irregular, and vary greatly from place to place. In considering the prices of these periods we must bear in mind the political condition of the country, which was broken up into a number of small independent States. Under these circumstances trade was scarcely possible, for each State levied tolls, and there was no police to protect the traffic on the roads, such as they were. Prices were in a great measure arbitrary and varied within short distances.

During the ten years 1850 to 1859 prices remained at a low level, falling steadily till the end of the period. I have referred to the causes of this in the last paragraph and need not do so again. The period of five years 1860 to 1864 is one of transition, prices being on the rise.

During the last fifteen years 1865 to 1880 the level of prices has been stationary.

11. For purposes of comparison I think it is best to take the two periods of twenty years 1840 to 1859 and 1860 to 1879, remembering that the first of these includes the high prices preceding Settlement and the low prices following it. Taking these two periods, we find that there has been a rise in the price of wheat of about 65 per cent. If we compare the average of the last twenty years with the assumed average of Regular Settlement, the increase is only about 33 per cent. There has been a corresponding rise in the price of other grains of from 50 to 65 per cent.; or, if the comparison be made with the assumed Settlement rates, of about 30 per cent. The rise in "gur" is about 28 per cent., and that in cotton 45 per cent. from the average of the first twenty years.

12. It would make this note too long if we were to examine minutely the fluctuations, tracing them from year to year. Up to the end of 1859 the variations are not very marked, or at all events the level of prices is low: but bad seasons raised the prices of rabi 1860.

Variations from year to year, and general conclusions to be drawn. Then followed failure of the autumn rains and loss of the harvests kharif 1860 and rabi 1861, resulting in a famine. There was a recovery of prices, but they never quite returned to their old position. From 1865 there is no tendency to return to the old level. There are oscillations, but they are over a higher line than before. If we exclude the scarcity year of 1869 we find that in Ludhiána between 1865 and 1877 the price of wheat varied between 37 and 28, and averaged 31. It is interesting to note the sudden recovery of prices after the scarcity of 1861-62 and the more gradual return after 1868-69, when the means of communication were more complete.

It is clear, then, that for the last fifteen years prices have on the average been stationary. The variations have not been abnormal, and are such as would naturally occur in consequence of full or short harvests. After the scarcity of 1868 prices returned to the level of the four years preceding it; and there is no reason for not believing that prices, which have been very high for the last two years, will not re-attain their average. On the whole, we may conclude that the level of the last fifteen years has been fairly established, and that, humanly speaking, there will, at all events, be no rise above that level during the next twenty or thirty years. An examination of the causes of the rise will confirm us in this.

13. Into the causes of the general rise in the prices of agricultural produce throughout India we cannot here inquire. Had the district continued in a state of isolation, and the means of communication through it remained as imperfect as they were at the time of the Regular Settlement, there would still have been a rise of prices. But the improvement in communications is the principal cause which has operated to produce, or, at all events, has accentuated the rise in this district to the level of the last fifteen years. The opening of the Sindh, Panjáb and Delhi Railway, which took place above twelve years ago, has, by extending the market for the produce of the district, once and for ever we might say, brought up prices. The area of the district is only 1,378 square miles, and it is traversed by about 35 miles of railway and 125 miles of metalled road. The principle that supply follows demand has been establishing itself in practice; and nothing short of a decided fall in the value of agricultural produce all over India, and, we may add, Europe, will make prices recede towards their old level. The means of communication in the district are now so good that a demand in any part of India is at once felt throughout it and answered. Were prices to fall much now, it is pretty certain that a good deal of the wheat of the district would find its way eventually into European markets; and the importance of wheat is much greater than its mere acreage denotes; for it is *the* grain of export, and is cultivated on the best irrigated lands, which yield three times as much as unirrigated.

14. I can do little more than refer to the third assumption quoted in paragraph 3, the rise in rent consequent on the rise in prices. Generally speaking, the two other principal facts which affect rents are (1) changes in the productive power of the land, and (2) changes in the standard of comfort of the cultivator. Our new assessments must be grounded on rents or the net profits of the proprietor as they are found to exist now. My inquiries into the subject of rents show that cash rents are very sensitive, and have a tendency to vary with prices. Rents in kind are fixed by custom, but a rise in prices directly enhances the value of a kind rent. The share of the produce which the proprietor now takes is certainly not less than what he used to take; so that we may say there has been a rise in rents corresponding to the rise in prices. The productive power of the land has certainly not deteriorated, though on the other hand it has not probably increased. The method of cultivation, amount of manure used, &c., have not altered within the last thirty years.

The standard of comfort of the cultivator has probably risen, markedly so in some parts of the district; but this has not in any way interfered with the rise in rents, as the value of the cultivator's share of the produce has also increased in proportion to that of the proprietor. The area under cultivation of tenants paying competition rents is not very large, and cultivating proprietors hold upwards of four-fifths of the whole. In the case of the latter there is nothing to check the rise of the standard of comfort; and it is probably greater than in the case of tenants. But, on the whole, I think we may fairly argue from the analogy of the rent paid by tenants-at-will to the net profit of the cultivating proprietor. We have no other data.

15. The conclusions to be drawn from an examination of the rise in prices is that, if we had only to look to them, we might expect an enhancement of the present assessment of 25 to 33 per cent., if we make a comparison with the prices assumed in framing it. There has, however, been a rise of 50 to 65 per cent. in the prices of the last twenty years over those of the preceding twenty; and, as the expiring assessment has been easily borne through the whole of its course, we might conclude that the rise in prices pointed to an enhancement to this amount.

16. We now come to the second part of the subject, and have to determine what scale of prices should be adopted in calculating the value of the net profits of cultivation. There is a marked difference between the prices shown in the first two columns (the harvest prices) and the averages of the year shown in the third and fourth. This was of course to be expected. When the new grain of a harvest is poured into the market the prices prevailing between traders will, except in the case of a failure of harvest, be lower than the average for the year. We should expect also that the prices at which the

Corresponding rise in rents.
Prices to be adopted for produce estimates; agriculturists' and traders' prices compared.

agriculturists disposed of their surplus produce to the local traders, or rather money-lenders, would be lower than those at which the latter resold it. The difference between the first two columns is the traders' profit in an immediate resale.

I believe that the prices shown in the first column are those which the average agriculturist actually realizes. Money-lenders may in practice give less favorable prices than they show in their books by taking over-weight and other devices; but, on the other hand, a good proportion of the agriculturists do not require the assistance of the trader, being able to bring their produce to market and dispose of it themselves, realizing the traders' prices. Some are also quite independent enough to store their grain and wait for a favorable market. The ordinary agriculturist is not bound down to his money-lender, but is quite capable of seeing that he gets a fair price. We may therefore neglect such considerations as interest on advances, *bantias*' perquisites; and assume that the average agriculturist realizes at least the prices shown in the first column.

17. In the Statement I have entered the prices which I propose to adopt for our produce estimates. These are, with a few trifling alterations, the averages of the agriculturists' prices for the last twenty years, the period laid down in the directions to Settlement Officers. Variations have been made here and there, where deficiency of materials or some other cause had produced an abnormal result; and a note is given on the statement explanatory of the prices adopted. It is improbable that the average of prices during the term of the revised assessment will exceed the average of the last fifteen years; but the difference between those of the last fifteen and of the last twenty years is not very great, and I prefer to adhere to the latter.

Prices adopted produce
for estimates.

No. 1393, dated 11th September 1880.

From—MAJOR E. G. WACE, *Settlement Commissioner, Panjáb,*

To—THE SETTLEMENT OFFICER, *Ludhiāna.*

I HAVE the honor to reply to your No. 228, dated 24th ultimo, forwarding a note and statement showing the results of your inquiries into the prices of the past forty years, and those which you propose to assume in your assessments as the average value of produce.

2. I append a statement in which the average values thus arrived at by you are compared with those on which other recent Settlements have been based.*

3. In paragraph 9 of your note you state that the produce estimates and the assessment of the expired Settlement was based on the prices which prevailed from 1840 to 1849. These prices as recorded

* Note.—Given in para 213 of the Report.

in the assessment papers and as now ascertained compare with the average prices of the past twenty years as follows :—

				SEERS PER RUPEE.		
				Value assumed at last Settlement.	Average value for the ten years ending 1849 ascertained by present in- quiries.	Average value for the twenty years ending 1879.
Kharif produce. Rabi produce.	Wheat	...	...	40 to 45	41	30
	Barley	...	...	52 to 65	67	40
	Gram	...	...	45 to 52	53	35 and 38
	Wheat and Gram	...	...	45 to 52	...	33 and 35
	Mustard seed	...	...	25 to 30	31	20 and 22
	Cotton (uncleaned)	...	...	...	17	10
	Maize	...	...	50 to 62	50	32 and 36
	Joar	...	...	56 to 63	51	36 and 40
	Bajra	...	...	...	85	...
	Moth	...	...	46 to 60	46	35
	Til	...	...	...	30	15
	Gur and Rab	...	...	...	19	15 and 16

And (in paragraph 15 of your note) you observe that from the point of view of prices only, Government may expect at this Settlement an enhancement of revenue not less than 25 per cent. at the lowest. The causes which have contributed to the establishment of these enhanced prices are described by you as being the general progress of the country during the past thirty years, the famines of 1860-61 and 1868-69, with their consequent stimulus to trade and especially the opening of the railway to Ghaziabad in 1870, which opened the local market to the demands of the whole of India and its seaports, and has thereby rendered it improbable that the prices of agricultural produce will ever sink again to the low level which prevailed between 1850 and 1860.

4. As the average prices on which you propose to assess agree closely with those recently assumed in the Settlements of the Delhi division and of the Rohtak district, and in view of the great trading advantages now possessed by the Ludhiāna district, I approve of your framing your produce estimates on this basis.

APPENDIX XIII.

NOTE ON THE CULTIVATION OF SUGARCANE AND THE
MANUFACTURE OF SUGAR IN THE LUDHIANA DISTRICT.

APPENDIX XIII.

Note on the cultivation of sugarcane and the manufacture of sugar in the Ludhiána District.

1. In this district sugarcane is grown either in the high lands with the aid of irrigation from wells, or in the low unirrigated lands along the river (Bét) where the soil is moist or actually flooded. The only exception to this distribution is that "Ponda," or the thick sort of sugarcane which is eaten raw, grows in a few of the Bét villages about Ludhiána city at the wells; but the area under this is very small, and I will, for the present, leave it out of account. In the Bét cultivation is confined to the Samrála tahsíl and to a few villages adjoining it. In the uplands there is very little west of a line drawn due north and south through the city of Ludhiána.

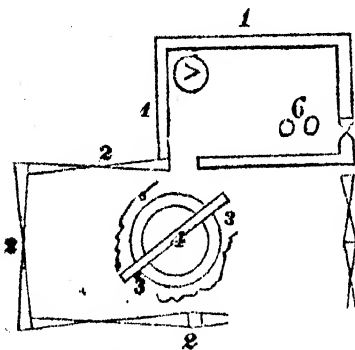
2. The varieties of cane and the method of cultivation have been described with sufficient detail in paragraph 112 of the Report, and I need not repeat what I have written there.

3. It is difficult to estimate the cost of each process of the cultivation of any crops; and I think that all calculations of this sort are to be distrusted. A cultivator distributes the labour of himself and his cattle over the whole of his holding in which many different crops are grown; and it is impossible to say that his labour on such and such a process of the cultivation should be valued at so much. The only method of arriving at a satisfactory conclusion appears to me to be this, to find out by actual experiment the average yield in the form that the cultivator disposes of the produce and the value of this; and to determine from the prevailing rates of rent paid how much of this is to be assigned to the cost of cultivation and how much to the rent. In this district land is mostly cultivated by proprietors, and the whole area under tenants is not large. When land is taken by a tenant for the cultivation of sugarcane, a rent in kind or share of the produce is never paid, but a cash rent is agreed on. The same is the case with maize and cotton; and the reason is apparently that the cultivator prefers to take the chance of reaping the full benefit of his labour to allowing the proprietor to share in the result of any extra exertion that he may make. Kind rents are suited to unirrigated lands where the labour is only that of ploughing, reaping and thrashing, and where so much depends on the character of the season. The labour involved in cane cultivation is much heavier than in that of any other crop, for it is continual and lasts for about twelve months; and there is besides the labour and expense of manufacture. Bullocks used in cane cultivation and in the presses last for a very short time comparatively, and have to be replaced after five or six years. These facts make it very difficult to estimate the cost and profit of cul-

tivation, and should also prepare us for a great discrepancy between the value of the outturn and the cash rents prevailing; and this we find to exist. It will be more convenient if I first describe the processes of manufacture and the various forms of produce, and then endeavour to estimate the yield in its various forms.

4. The processes of manufacture employed in the Bét and in the Dhaia or uplands are quite distinct, and an account of the latter will be given first. When the season for pressing approaches (November to March) the *belna* or mill and other appliances are put in order. The number of *belnas* in a village depends on the area under cane, one being generally shared by three or four proprietors, and being sufficient to press some six or seven acres of cane in the season. The *belna* is put up outside the village, and is surrounded by a wall four or five feet high with an opening at one side. Leading off this enclosure is the house where the juice is boiled. The house and enclosure are allowed to fall into ruin every year, the former having to be re-roofed and almost completely renewed annually. The *belna* too is dismantled every year; and the machinery lies about, in the village pond generally, where it is immersed. The building of the boiling house and the

setting up of the *belna* are a great undertaking. The annexed sketch shows the position of the *belna*, boiling house, &c. The mill used throughout the district is of the sort described in "Punjab Products" (p. 305). The cane is pressed between two horizontal rollers of wood, which are made to revolve by two vertical cogged wheels, working into an upper horizontal one, which is turned by two pairs of bullocks yoked to levers attached to it. The horizontal wheel is above the surface, while the rollers are sunk in a pit. The day before the cultivators "vári" or turn at the mill, the cane is cut and stripped in the field, and



Boiling-house.
Enclosure of the mill.
Lever worked by bullocks.
The *belna* or mill pit in which it works, &c.

5. The furnace (mouth of it.)
6. The pans for boiling.
7. The plate for cooling ("gand").

the parts reserved for seed set aside. The cane is then carted to the mill in the evening, and next day it is pressed and the juice extracted. Two men sit at opposite sides of the rollers passing through the cane, which is tied up in bundles of 40 or 50 canes each. The juice runs into "cháttis" or jars of earthenware placed beneath the rollers to receive it. As the jars are filled the juice is taken into the boiling-house, and the boiling commences.

5. At one end of the boiling-house there are two pans of iron, about four feet in diameter, placed over a flue heated by a furnace fed from the outside of the building (see sketch), the fuel being the refuse stalks, heads, &c.

Boiling in the Dhaia.

The pan nearest the wall is lower than the other, and is fixed (called "pichla"); and into this the juice is poured. The second pan is higher and movable. When the juice has been boiled and evaporated in the lower pan for half an hour, it is lifted with a ladle into the upper pan, which is cooler; and there boils more slowly till it is ready, generally in about an hour. The pan is then lifted off, and the juice stirred till it is cool, when it is poured into a flat dish of earthenware, ("gand"), where it lies to the thickness of about one or two inches. It is, when cool, scraped up with a wooden scraper, and is either granular, in which case it is called "shakar," or viscous ("gur"). If "gur," it is made up into balls of about four seers weight ("bheli.") "Shakar" is put into earthenware jars. It depends entirely on the quality of the juice whether the produce takes the form of *shakar* or of *gur*; and this depends again on the soil and the character of the season. In the above process no chemical appliances are used; but in places lime and water are poured into the boiling juice to clean it, the scum being removed. This is generally done where *shakar* is produced, and has the result, it is said, of giving it a light colour, which is a recommendation.

The total number of men employed on pressing and boiling is generally seven: two to drive the bullocks, two to feed the mill, and one to hand the cane to the feeders, one in the boiling house, one to feed the furnace outside. The last is a Chamár or menial; but the other six are all of the cultivating class. The Hindu Jats of the Dhaia not only make, but sell at their own price and when they choose their *gur* and *shakar*.

6. The state of things in the Bét, where the population is all Mahomedan, is very different. The process of manufacture there is of two parts, the juice is extracted and boiled at the "belna" in much the same manner as in the Dhaia; but takes the more liquid form of "ráb." Only one pan is placed on the furnace; and, when two jars are filled with juice they are emptied into this through a straining cloth, and the juice boiled. Water boiled with "sakhlaie" bark is added for the purposes of purifying the juice, and the scum is removed as it rises. The boiling takes about 2½ hours. When the boiling is completed the juice, now in a semi-liquid state and called "ráb," is taken out in a ladle, and put into an open vessel of earthenware till it cools, when it is poured into high jars ("matti"), the mouths of which are then closed with mud. These jars hold about 3½ to 4 maunds (packa* weight) of ráb.

The boiler, called "rábí," is always a man of the shopkeeping class, boiling being something of an art. The other men at work are, as in the uplands, cultivators or village menials. But the cultivator has really nothing to do beyond extracting the juice. Where the cultivator is not involved and can dispose of his produce himself, the "rábí" is his servant and paid by him. But he is generally the servant of the money-lender who has advanced money on the crop. It will be better if I here describe the relations between the ordinary cultivator of the Bét and his money-lender, as they so materially affect the sugar industry.

* The *packa* maund is the Government standard, and the *kacha* that in use amongst the people. The latter is about two-fifths of the former.

7. The Mahomedan cultivator of the Bét is naturally much more thrifless than the Hindu Jat of the uplands. Relation between money-lender and cultivator in the Bét. Besides this the area under cane is generally in much greater proportion to the cultivation (12 per cent. in Samrála Bét), and he cannot subsist on his other produce and pay the Government demand while the crop is maturing, so he has to borrow money; and he finds no difficulty in getting as much as he pleases on the security of his cane crop. He is charged a fair rate of interest on the advance, and in payment of it his "ráb" is taken at a valuation according to its quality, the price being fixed year by year. The cultivator is thus entirely at the mercy of the money-lender. The latter depends for this gain not so much on the interest as on the profit that he derives from the manufacture of *ráb* into sugar; and when the cultivator is completely involved and owes more than he can ever pay, the money-lender seldom proceeds to extremities, provided that enough of cane is grown.

8. The second part of the process of manufacture is completely in the hands of the shopkeeper class, the headquarters of it being in the town of Máchiwára, which lies just over the Samrála Bét. The *ráb* is taken off in the jars to the shop of the purchaser, in the back room of which, in one of the corners, a space four or five feet square is walled off to the height of about four or five feet. This is called a "*kálmchí*." At the bottom of this, about a foot from the ground, a rough strainer is made of sticks fixed in the walls and running across at intervals, on the top of which are placed reeds and on the top of these a coarse cloth. The sides of the *khálmchí* are lined with "*chitai*," or matting made of river grass. When twenty or thirty jars have been collected the *ráb* is poured into the *khálmchí* and left for twenty or thirty days, during which the "*sírah*" or more liquid part drains off into a receptacle. The *ráb* is then covered with a weed that grows in the water, (called "*jála*") put on to the depth of two or three inches (see name at p. 308 of "*Punjab Products*"). This is changed every three or four days for about a fortnight. The effect of this covering and the straining is to clarify the mass; and, as the upper part assumes a light yellowish colour, it is taken off, and the remainder covered up again. The produce thus taken out is put in the sun and trampled. It is then called "*khand*." Another and superior form of produce is "*bura*," which is thus made. The *sírah* is strained off as for "*khand*," and the "*khand*" is mixed with one-fourth part water, and boiled for evaporation in a pan for half an hour. It is then taken off and stirred till cool, when it takes the form of "*bura*." The *sírah* or "*let*" (molasses) is boiled and kept in jars till the rains, when it is treated like *ráb*, being put into a *khálmchí*: or if it is not good enough for this, it is used in its liquid form for sweetmeats, &c.

9. An idea of the relative values of the various forms of produce may be derived from the prices per maund (*packa*) prevailing last year:—

Relations of the various forms of produce.

Sirah	...	...	Rs. 2-4	
Ráb	...	...	„ 2-8	(Raw sugar in a liquid state.)
Gur	...	...	„ 4-0	(Raw sugar.)
Shakar	...	...	„ 5-0	(Ditto.)
Khand	...	...	„ 10-0	(Refined sugar.)
Bura	...	...	„ 12-0 or 13-0	(Ditto.)

The price of *ráb* is that allowed to the cultivators by the money-lenders; those of *gur* and *shakar* are full prices, as the Jats of the Dhaia sell at full prices: the prices of *khand* and *bura* are those prevailing in the bazars of Ludhiána and Máchiwára at the time of the trade (March—May.) The prices of all forms of produce vary a great deal from year to year according to the demand, a poor outturn here or elsewhere generally raising them.

Most of the *ráb* of the Bét finds its way to Máchiwára, the manufacture into *khand* and *bura* being in the hands of resident Khattris and others.

Estimate of produce in Máchiwára.

The following facts as to the total outturn per annum of *khand* and the variation of prices during the last ten years may be interesting. The total number of “*kháunchis*” in the town is about seventy, and the outturn of *khand* for each *kháunchi* is on an average 130 maunds *packa*. This would give the whole trade at 9,100 maunds per annum, worth about Rs. 90,000. The prices per maund *packa* have been:-

1872	...	Rs. 10-0	1878	...	Rs. 15-8
1873	...	„ 9-8	1879	...	„ 12-0
1874	...	„ 8-0	1880	...	„ 12-0
1875	...	„ 8-8	1881	...	„ 10-0
1876	...	„ 8-8	1882	...	„ 9-0
1877	...	„ 13-0			

There are also *kháunchis* at Bahlolpur, and in a few of the larger villages in the Bét or just over it. This estimate does not take into account the yield of “*sírah*,” of which there is a very large export. From an estimate of the amount of *sírah* that comes out of each “*kháunchi*,” I think that the total value of the export from Máchiwára would be Rs. 60,000, making the whole trade worth about one and a half lakhs per annum. Octroi is charged on *ráb* brought into Máchiwára at an *ad valorem* rate of 1 per cent.; and the income under this head for the last three years has been, I am informed, Rs. 1,182, 683, 1,387, which would make the average value of the “*ráb*” about one lakh, manufactured and sold as above for about one and a half lakhs. For the *kháunchis* in other places we may add about one lakh as the value of the produce.

11. The “*khand*” and “*bura*” produced in Máchiwára and the Bét villages, as well as the “*gur*” and “*shakar*” of the Dhaia, are bought up for the most part by traders who come in search of it.

The *gur* or *shakar* generally finds its way into the “Jangal” or country lying to the south-west of this district (Protected States and Ferozepur district); and some of the *khand* goes in this direction, too, in return for the common grains brought up by the

trading Jats in their carts. A good deal of the latter also goes by Rail towards Lahore and beyond it, as it is not produced much higher up, and is in great demand with the makers of sweetmeats in large towns. The rustic population prefer the raw forms.

12. Experiments made to determine the outturn are not very reliable, because they cannot conveniently cover a large enough area. One or two made by me in the uplands indicated a yield of over thirty maunds of "gur" an acre, and the estimates given by agriculturists point to the same result, some giving a much higher one. They say that the yield of a poor crop is ten *kacha* (four *packa*) maunds for a *kacha* or local bigah, and that a fairly good yield is 20 maunds, while as much as 25 or 30 maunds are obtained in a good year. The result of these estimates is, in our weight—

Kacha maunds per kacha bigah.	Packa maunds per acre (approximately.)
10	20
20	40
25	50
30	60

The price of gur averages between Rs. 3 to 4 a *packa* maund, which would give the average gross produce at about Rs. 100 an acre. Beginning from the other end, we find that the rent paid for land in the Dhaia (irrigated) land intended for sugarcane varies from Rs. 12 to 18 and even 20 an acre. The average is about Rs. 15.

In the Bôt the crop is poorer, and I would not estimate the value of the outturn at more than Rs. 60 or 70 an acre. Cash rents for the sugarcane land do not run so high, averaging about Rs. 10. The average outturn of *râb* is about 30 maunds (*packa*) an acre. As before pointed out, it is difficult to say what the actual cost of cultivation of the cane crop is, because each cultivator grows a variety of crops in his holding. The cane crop is always turned into cash, paying the revenue and providing ready-money for marriage and other expenses: while the maize and the *rabi* crops are mostly eaten. Thus the whole agriculture of the holding hangs together, and we cannot separate any crop and say that its cost of cultivation is so much. Cash rents are not a safe guide for the reasons given before, and because they have to be paid in advance, while the cultivator has to wait at least eighteen months for his return. I should say that the cost of the cultivation would be in the proportion of about 3-4 of the whole outturn, that is if it were done on the present method by a large proprietor employing hired labour. The profit to him would be per acre about Rs. 25 in the uplands, and Rs. 15 or 18 in the lowlands, if he sold the produce in the form of *râb*.

13. As to the profit in the manufacture of "khand" &c., it is estimated that on an average three maunds of *rāb* go to one maund of *khand*, and there is the "sirah" besides. This would make the manufacturer's profit upwards of 30 per cent. on his outlay (see relation of prices in paragraph 9.) The labour involved is very small. As a matter of fact the profit is much greater, because interest is charged on the advances and the prices are fixed by the money-lender. One need only point to the wealth in the town of Máchiwára as a proof of this. There is not much competition in the trade, which is in the hands principally of a few Khattris, Banias and Sūds, the first of these being the majority. The cultivators would not take the trouble of looking to their own interests and securing better terms even if they were free to do so; and most of them are much too deeply involved. I do not think that much less than 50 per cent. on his outlay returns to the money-lender and manufacturer annually. The transactions are on such a small scale that my calculations as to outturn and profit are, I fear, little better than guesses: but the facts remain that, notwithstanding the relatively much greater rise in the price of grain and heavier labour and other disadvantages involved in the cultivation of cane and the manufacture of *gur* and *rāb*, the area under cane has been very considerably extended, and there is no tendency to give up growing it. This points to the crop as a very profitable one, and as to the profits of manufacture from *rāb* there can be no doubt.

14. I can at present see no prospect of such a development of the industry as would lead to the separation of the cultivation from the processes of manufacture of *gur* and *rāb*. No improvement has up to the present been attempted in the mill or in the process of boiling. It is not unlikely that changes will occur within a short period in respect of these, if endeavours are made to introduce new mills or model boilers. The process of making *khand* from *rāb* is obviously very rude. The annual value of the outturn of the crop may be estimated at two and a half lakhs of rupees (in refined sugar, or less than two in *rāb*) in the lowlands and nine and a half in the uplands, total twelve lakhs or nearly twice the revenue of the portion of the district in which cane is grown; and there are sugarcane growing districts on three sides of this. I am scarcely prepared to say what would be the result of the introduction of capital on a large scale into the industry; but it would be possible to do much to improve it without taking it out of the hands in which it now is.

15. There is good deal of anxiety at Máchiwára lest the opening of new lines of railway (particularly the Rewári-Ferozepur line) should bring in a trade from lower down, and cut out that from this district. It is also possible that the extension of irrigation from the Sirhind Canal may very materially affect the trade in *gur* from the uplands of this district to the south-west, as there is no apparent reason why cane should not grow in the "Jangal." The country through which the Abohar and Bhatinda branches of the canal will run at present draws a great part of its supply from the Ludhiána district, but time only can show whether these apprehensions are well grounded.

APPENDIX XIV.

Glossary, illustrative sayings, proverbs, &c.

The following glossary has no pretensions to be exhaustive. The names of the crops, agricultural operations, &c., &c., do not differ ordinarily from those in use throughout the Panjab, and may be found in any dictionary; and the words given here are some of the more common ones which are peculiar to the District, and are meant merely to be illustrative.

VERNACULAR.		ENGLISH.
ad. ad-o-ad	...	... separate.
akéran	...	... on one occasion.
án	...	... oath.
áhan	...	... evening.
awagon	...	... senseless.
badh	...	... stubble.
badna	...	... to cut (crop); also to beat.
bagel	...	... side ("ekbagal" = on one side.)
baghal	...	... enclosure.
báhla	...	... very much.
bája	...	... partially insane.
bál	...	... wind.
banota	...	... a debtor.
bát	...	... distance, <i>eg.</i> , "das ko bát" = ten kos distant.
beli	...	... hole.
berra	...	... barley or wheat sown with gram.
bhon, bhuin	...	... land.
bobó, bobi	...	... mother.
botál	...	... a heap of grain after threshing.
boja	...	... a young boy.
buláhr	...	} a village menial, whose business it is to call the villagers together for any purpose.
buláhri	...	
burkna	...	... jump.
chakota	...	} a fixed sum.
chakáwa	...	
charánd	...	... grazing ground.
charau	...	... bucket of a well.
chháas	...	... the ashes from the furnace of the sugar boiling-house.
chhalli	...	... maize.
chhida	...	... thin.
chobar	...	... stout.
chugara	...	... four pairs of bullocks at a well with two buckets.
chún	...	... a corner.
dáb	...	... a piece of common land cultivated without permission.
dabra	...	... a high place.
dáda ladhi	...	... ancestral property.
dagar	...	... a clear road.
daul	...	... field boundary.
dathaur	...	... a man who belongs to two villages.
dhaka	...	... by violence.

Note.—It has been found impossible in printing to distinguish the consonants by diacritical marks.

dhāl	...	...	government revenue.
dham	...	...	very hot weather in the rains.
dhān	...	...	rice.
dhata	...	...	a bull.
dhusa	...	...	thick cloth of any sort.
gaba	...	...	in the middle.
ghoā	...	...	proclaiming aloud.
gohar	...	...	a road.
hāk	...	...	cry, call.
hālī	...	...	revenue.
hīm khīm	...	...	profit and loss.
ikh	...	...	sugarcane.
jīja	...	...	a name applied by a woman to her sister's husband
johar	...	...	village tank.
jora	...	...	tenant.
kakh	...	...	grass.
kalān kār	...	...	clever.
kales	...	...	quarrel.
kand	...	...	gram, straw.
kanaui	...	...	a late crop of barley.
kāt	...	...	for what reason?
khāl	...	...	water course.
khālāna	...	...	family.
khāmbī	...	...	the man who drives the bullocks down the run of the well.
khata	...	...	a small division of a field.
khātāna	...	...	a holding of land.
khēra	...	...	the village homestead.
kiāra	...	...	a small division of a field.
lāg	...	...	near.
lahar	...	...	anger.
lāhna	...	...	a cultivator's holding.
lap	...	...	the full of one hand open.
lasera	...	...	lean.
līhan	...	...	cart rucks.
malkīna	...	...	rent.
mallo malli	...	...	violently.
mandwāra	...	...	drought.
maranga	...	...	form.
māru	...	...	irrigated.
matili	...	...	a pillar of mud.
mer	...	...	property.
mintā	...	...	measurer.
minti	...	...	measurement.
modhi	...	...	the man who catches the well bucket when it comes up.
nāka	...	...	the opening through which the water goes into the field.
nāki	...	...	the man who lets the water into the field.
nem	...	...	oath.
nīra	...	...	straw.
pahā	...	...	a village road.
pahī	...	...	a small road to a well.
pāli	...	...	cowherd.
pāndu	...	...	white clay, very hard.
pāo	...	...	a public drinking place.
parōkon	...	...	strength.
pathkan	...	...	enclosure where cowdung cakes are made up.
pathwāra	...	...
patri	...	...	village boundary.
pawādh	...	...	cast.

pawáh	...	...	a man who attends to the páo (see above).
pusár	...	...	for generations ("pusht dar pusht.")
qita	...	...	occupation, trade.
qail	...	...	trouble, extremity.
rarkha	...	...	broom.
reh	...	...	manure.
rohé	...	...	a waste piece of country.
runga	...	...	something given over and above a purchase.
sahára	...	...	relief, recovery (from sickness, &c.)
sájhra	...	...	morning.
sakiri	...	...	relationship.
sammán	...	...	favourable season ("samman lag gia" = there has been rain and the harvest is good.)
sáu	...	...	respectable.
sand	...	...	an instrument of any sort.
sanj	...	...	evening.
sánwin	...	...	fallow.
sarjána	...	...	to be completed.
sénd	...	...	a heap of half-threshed grain.
sénja	...	...	irrigated.
síár	...	...	a furrow.
sídhra	...	...	an innocent fellow.
sotha	...	...	agreement.
tagáda	...	...	jewelry.
tanpar	...	...	waste land.
tirk	...	...	a long narrow field.
than	...	...	recollection.
thula	...	...	a subdivision of the village.
tibi	...	...	sandy soil.
tóbah	...	...	village pond.
tut	...	...	balance of revenue due on land.
uchal	...	...	choice ("teri uchál," you may take your choice.)
ut	...	...	a foolish fellow.
unjal	...	...	the full of two hands together.
vahndar	...	...	cultivated land.
vidh	...	...	the stake on which the wheel of the well is supported.
wár	...	...	hedge.
wárah	...	...	hedged enclosure.

Specimens of agricultural and other sayings, proverbs, &c.

1. "Barsia Diwáli; já phusi, já háli."

"With rain at the Diwáli, a bad and a good husbandman are the same."

2. "Kata laga, kál siáte."

"When the month of Kátak begins (15th October), it may be known whether there is to be a scarcity or not."

3. "Assu kar gia ghassu : Kátak dhunde mahengla; bhule phire guár."

"If Assoj (15th September—15th October) passes empty (without rain) the man that looks for clouds (rain) in Kátak is a fool."

4. "Kateon Sáwan kare, je bháwe kartár."

"If God wills He can make Kátak like Sáwan," i. e., He can give as good rain in Kátak (October) as in Sáwan (August).

5. "Je sir bhije Kakra, Singi bhije pith :

Dak kahe, 'sun Bhadle, sammán lage sir bhuj.'"

"If the head of *Kakra* (last day of *Hār*) is wet, and the back of *Singi* (a date at the end of *Bhādon*) *Dak* says to *Bhadle*: "The harvest will be as high as the head." *Dak* was a famous *Brahmin* seer, and *Bhadle* his wife; and the saying means that, if rain falls from the end of *Hār* to the end of *Bhādon* (July—September), there will be a splendid harvest.

Two other lines say,

"Je na bhije *Kakra*; *Singa* khāli jāi :

Dak kabē sun *Bhadle*, palān bhar bik jāi."

"If there is no rain at *Kakra* and *Singa* also passes without it, *Dak* says to *Bhadle*, grain will sell by measure of a *pālī*," (a very small dish), *i. e.* grain will be very dear.

6. "Dāta kāl parakhīyē; dhinmeu *Phāgan* mahān ;

Nāri tāt parakhīyē, jān dhāt pālē nān."

"Famine time is the test of charitable man; the month of *Phāgan* of a good milk cow; a wife is tested by poverty (when the pocket is empty)."

7. "Phāgan na si jāndi; jad bhar bhar kunāla chhāndi."

A man says to his wife: "Do you not think of the month of *Phāgan* when you fill the kneading dish so full," *i. e.* *Phāgan* being the critical month, when the old grain has been used up, and the new not in, it should always be borne in mind in using the store of meal.

8. "Mā nālon dhī siāni: rīde pake pāwe pāni."

"The daughter is cleverer than her mother" (spoken sarcastically); she pours water in the food just as it is cooked" (and spoils it).

9. "Asso dekh mithāian; bhar Bhādon kapās :

Chet dekh ke kanak nun; bhech bhāwe khā."

"In *Assoj* look to the cane; throughout *Bhādon* to the cotton; in *Chet* look to the whe: (when these seasons have passed without injury to the crops) you may see or eat (what you have in store without anxiety)."

10. "Biāh Bhogedi: arrāt Jogedi."

"A marriage in the house of *Bhoga* and the din (usually attending one) in that of *Joga*," *i. e.*, one man has cause for rejoicing and another does it for him.

11. "Mā mōi kaphan kolon; dhī da nāon bukchī."

"The mother died without a coffin, and the daughter is called a bagful," said of a person who has risen from nothing.

12. "Je na bhiji *Kakra*; kās khasāuna lakra."

"If *Kakra* is not wet (see No. 5), what is the use of yoking the plough?"

13. "Kohāliān diān bāhiān; kadōhiān diān dōhiān :

Kapāliān diān chāriān: tīne nīphal giān."

"The ploughman, milker and grazer who do not know their work, lose their labour." *Hāli*=ploughman; *dohi*=milker and *pāli*=cowherd: the prefix *ka* or *ko* means ignorant.

14. "Dakhan bage san badle; rānd milāi khā :

O barse; o udale; khāli koi nā jā."

"If the south wind blows with clouds; and a widow eats cream: the one will rain and the other go away (with some one); both of these things will surely happen."

15. "Sawér sár da mahengla; sawín sanjh panihár :

Chike tor paráoná; tihánnun gáte mār."

"Clouds in the morning; rain in the evening; a guest who comes after meal time: all three be hanged." *Chike tor* means the time when everything has been eaten, except the fragments (*tor*) kept for the children in a basket (*chike*).

16. "Barsa Chét: na ghar na khét."

"If rain falls in *Chét* the grain will neither come home nor remain in the field: " i.e., rain in the month of *Chét* does only harm.

17. "More charkha piche kand; is bidh jāe bibí de lang :

Khái kanak te palupe pat; ki kare, Jalañ Jat."

"If she keeps her spinning wheel before her and the wall behind, a woman will go on all right; if she eats wheaten bread and dresses in silk, what can you do, Jalañ Jat, (to keep her from going wrong)."

This *Jalañ Jat* is an original character who appears in popular stories. He was on one occasion sent by his brother to a *Jotsi* or astrologer's house to inquire the proper date for the marriage of his brother's daughter. On the road he passed the house of a *baid* or physician, and heard the people lamenting. He inquired what was the matter, and was told that the doctor's son was dead. He was astonished and said: "Do doctor's children die?" At the *Jotsi's* house also he found lamentation, and was told that the *Jotsi's* son-in-law had died. He went away saying: "Baidāñ ghar pitie, Jotsiāñ ghar rand: Chal, Jalañ, ghar; apne sáhā de nasang," which means that doctor's children die and *Jotsis* cannot fix so favourable times for their daughter's marriage as to prevent their being left widows; therefore you may fix your own 'sáhā,' or auspicious date for a marriage.

18. "Jatka Jat na raha kama; bhukha Jat kare salamā ;

Rajia Jat kade gál; Jat bigāre murshid nāl;

Jadon Jat de ábu pake: denda sake bāpnun dhake."

These lines are descriptive of the character of the Jat. "Jat will never serve Jat: a hungry Jat will make obeisance; a full Jat will give abuse: a Jat will fall out with his *murshid* (spiritual guide); when his harvest is secured (*ábu* means a half ripe condition) a Jat will turn on his own father."

19. "Bhuka Karār, khir khir hase.

Bhuka Rangar kamar kase :

Bhuka Jat páwe ro? leni ek, na deni do.

"A hungry shop-keeper will laugh loud; a hungry *Rangar* will pull himself together (tighten his waist): a hungry Jat begins to cry" (the rest is without meaning.)

20. "Jat, dhat, sansár kabila gálda;

Káon, Kalál, Kamboh kabila pálda.

A *Jat*, a bull and an aligator will destroy (or ill use) even their own offspring. A crow, *Kalál* or *Kamboh* cherish them."

21. "Panchanda kahna sir mathe : *parnála* uthe."

"The *panch* or arbitrator's decision is bowed to; but the *parnála* or drain pipe (about which the dispute arose) remains where it was."

22. "Baghiára *khá* na *khá*, munh lahu bhariya." "Whether the wolf ate the sheep or not it gets the credit for doing so" (*lit*: its is full of blood).

23. "Bañne Jat na cheriye, hati te Karár :

"Beri mallah na cheriye : bhan dewe buthár."

"Do not interfere with a Jat in his field, a Karár in his shop, a boatman in his boat; or you will have your face broken."

24. "Dáhriwála nál chale: tán main dangar chár liáwán."

A small boy says. "Give me a man with me, and I will herd the cattle."

25. "Nau sau chuha *kháko* billi; Hajnun chali."

"The cat goes on a pilgrimage after eating nine hundred mice" said of a wicked person who thinks to sanctify himself by a journey to Mecca.

The most popular songs amongst the Jats are the tales of *Hír and Ránjha*, *Mirza and Sahibán*, *Sassi and Punun* and many others of the same class well known throughout the Province. These stories have been the subject of poems by Wáris Sháh ("Báre Sháh") of Jandiáli Sherkhán, &c., but there are many versions current amongst the people themselves, passed from mouth to mouth. The following verses from a current version of *Mirza and Sahibán* will serve as a specimen of these popular forms.

(Sahibán says):—

"Uthín, Mirza, sutia jandón ghat wahír,
Naihe nún ján ná denge Sábibán de sake yír,
Uthia ugáre bhanke, chille cháhria tír,
Pahle máre kasko, phatia Ján Shamír.
'Uh nún na marín, Mirzia, katha chungian shír'
Máro na Mirza yárun; phar lío mere bání,
Mainun purje purje uládeo aise yár de thán,
Jitna gunah jahánde likh-lo mere náón."

Mirza, and his friends have taken away Sábibán from her people, and are sleeping. Sábibán's brother and his friends came up. Sábibán says, "Get up Mirza from the jand tree and take the road with your friends, my brother will never let you go. Mirza got up and yawned; then he strung his bow and fired, wounding Shamír" (Sábibán's brother). (Sábibán says to Mirza) "Do not kill him, Mirza, we drunk the same milk" (to her brother) "do not kill Mirza, my lover; seize me and tear me in pieces in his place. Set down all the sins in the world to my name."

ward : the

Marriage and funeral songs are generally without music in the way of rhyme or meaning, and the former are generally unfit to be reproduced, the

